The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVII, No. 9 CHICAGO, ILLINOIS AUGUST 26, 1911

THE ADVANTAGES OF THE SO-CALLED DECORTICATION OF THE LUNG IN OLD EMPYEMA*

F. B. LUND, M.D.
BOSTON

In operating for an old empyema we are presented with the problem of closing an old, suppurating cavity with stiff, unyielding walls, the inner wall consisting of the lung with its thick covering of fibrous tissue and fibrin, the other wall being the wall of the chest cavity. It is obvious that to enable such an abscess cavity to close, either the bony framework must be removed from the chest wall, so that it may sink in against the lung, or the thick fibrous covering must be removed from the lung and the lung expanded so as to come in contact with the chest-wall, or a combination of these two methods must be affected. The old mutilating process, with which the names of Estländer and Schede are connected, consists of extensive multiple resection of the ribs, with or without the removal of the intercostal muscles, allows the skin of the chest and soft parts to fall in against the lung, and has for many years been known to present grave objections. In the first place, the mutilation was extensive, the operation was accompanied by a good deal of trauma, hemorrhage and shock, features which rendered it especially dangerous in patients weakened and exhausted by the chronic suppuration of an old empyema. In the second place, if it was performed in children during the growing period, the extensive removal of the chest wall would hardly fail to result in a curvature of the spine which, from lack of support of the ribs on the affected side would accentuate itself as the child grew and would be accompanied by increasing deformity.

In 1893, De Lorme in France and Fowler in America both hit on an operation which was designed to substitute for the mutilating operations of Estländer and Schede, and was planned to allow the lung to expand against the chest-wall, instead of letting the chest-wall fall in against the lung; this operation came to be called decortication of the lung. De Lorme noted that in old empyema the shrunken, contracted lung lay in the gully between the ribs and vertebra, covered and bound down by a thick, inelastic membrane consisting of partly organized fibrin and fibrous tissue. He thought that if a sufficiently large opening in the chest were made for the manipulations, and if this membrane were incised and peeled off the lung and removed, the lung might expand and fill the chest cavity, thus obviating the necessity of extensive removal of the chest-wall in order to accomplish his object. He cut a square flap, including the third to the sixth ribs, the base being at the anterior border of the scapula, the upper and lower margins following the ribs, and turned it backward in the soft parts as a hinge. He found the lung lying in the costovertebral angle, the lower surface of the cavity being the vault of the diaphragm, and the cavity extending to the apex of the lung. The parietal pleura was bound down with a membrane 1 to 1.5 cm. thick. He found the position of the lung impossible to define, it was so bound down by this membrane. He incised the membrane a hand's breadth behind the anterior chest-wall, in order to avoid the pericardium, going cautiously to avoid injuring the lung, using first the knife, then blunt scissors. On coming to the healthy lung, he enlarged the incision, peeled off the membrane and as the patient coughed, the middle lobe of the lung protruded through the opening, reached the chest-wall and even projected through the window he had made in it. This was repeated for the other lobes of the lung. After excising the visceral pleura, curetting and excising portions of the parietal pleura, the flap was put back and sutured around a drainage tube in the lower angle. He concludes, (1) that it is possible to free a lung from the membrane, which holds it down even long after an operation for empyema; (2) that the method is applicable not only on the right, but on the left, if one goes far enough behind; and (3) that this is better than Estländer's operation, because it expands and tends to restore the function of an otherwise useless lung. The great deformity and falling in of the chest-wall may be avoided. This, in young patients, might lead to spinal curvature.

At about the same time Fowler[1] of Brooklyn, operated on a woman, 35 years of age, who had a persistent sinus. He removed three and a half inches of five or six ribs and excised a mass of cicatricial tissue surrounding the sinus, and attached to the chest, wall-diaphragm, pericardium and lung. Hemorrhage was stopped by gauze pressure. There was considerable shock after the operation. The cavity was tamponed with gauze. The tampon was removed in twenty-four hours and a lighter one substituted. The cavity was irrigated and the gauze changed every day. The lung expanded and the cavity was closed in twenty-eight days. Thus, Fowler, with no special plan, apparently, of allowing the lung to expand by removal of the tough, fibrous covering, had at about the same time with De Lorme performed this operation. It seems to me that the credit of the operation should belong to De Lorme as he, apparently, had a definite plan to accomplish what he was after. To

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

* Owing to considerations of space, the case reports are here omitted. They are given entire in the Transactions of the Section and in the author's reprints, a copy of which will be sent by the author or by THE JOURNAL on receipt of a stamped addressed envelope.

1. Fowler: Med. Rec., Dec. 30, 1903.

this valuable procedure of Fowler and De Lorme, has been applied the clumsy name of "decortication," from the Latin *cortex*, bark, meaning literally, barking or peeling off the bark from the lung. It is not, therefore, as a new procedure that I venture to take up this subject for discussion, but rather for the reason that so little has been written about it that I fear some of us may forget what a valuable resource it is and may, unnecessarily, perform severe mutilating operation when this simple operation would be safer and more effective.

Looking over the literature since that time, comparatively few reports of this operation are to be found. The same is true in regard to the operations of Estländer and Schede. I believe the reason for this to be, that in the primary operation for empyema, resection of the rib and provision of adequate drainage at the proper point has resulted in the cure of so many cases that few chronic cases result. Among the few reports in literature of the results of lung decortication, Charles M. Dowd[2] of New York, reports excellent results from decortication in old empyema in children. Ransohoff,[3] however, finds fault with the results of lung decortication, advising instead of decortication, the making of multiple incisions in the thickened pleura, thus allowing the lung to expand at numerous points. It does not seem to me that this method of multiple incisions can possibly be as efficient as the free and complete removal of the membrane and, as in my hands the free and complete removal of the membrane has been efficient, I thought it worth while to report my experience, which now amounts to seven cases.

Samuel Lloyd[4] of New York, who has had a very large experience in the treatment of empyema, chiefly in children, in a very interesting article given at the twenty-fifth anniversary of the New York Post-Graduate Medical School, states that in the treatment of old empyema it is not necessary to remove the pulmonary pleura, but simply to break up the adhesions at the borders of the cavity between the parietal and visceral pleura. This is undoubtedly true in early cases, and I believe that such adhesions should at the first operation of draining an empyema be so broken up. In the older cases, however, in which the membrane is thick, firm and rubber-like, it will easily be seen that it will be thickest and firmest at the point of attachment to the chest wall, so that it would be more difficult to break it at this point than where I have done it, namely, at a vertical line starting about the middle of the bottom of the cavity and extending upward along the lung. It is possible also that the lung might expand with this great, heavy thick piece of membrane left on it. In the early cases, the lung would probably expand whatever is done to it, but in the old cases with this great, thick, leathery piece of membrane, the expansion of the lung could hardly be as complete and uniform from having its adhesions broken up at the edges, as it would from slitting it up in the middle and entirely separating it. Anybody who has felt with the finger and seen the wonderful expansion of the lung after the removal of this membrane, which is not a difficult procedure, will hardly advocate, in cases in which the membrane has any thickness at all, the method of simply breaking up the adhesions at the edges and leaving it on.

I think Lloyd's contribution to the subject is of great value, in that he emphasizes the point of removing at the primary operation a piece of more than one rib, if necessary, in order to get in more than two fingers to break up adhesions to the pleura, and this procedure was adopted in Case 7 of my series of cases, and I shall adopt it more often in the future. It cannot be said, however, to be absolutely essential in the early cases, and in the late cases I do not think it can be as satisfactory as the removal of the thick, leathery membrane or the old procedure of decortication.

In an experience of eighteen years at the Boston City Hospital, where I have operated in a fairly large number of cases of empyema, mostly, however, acute, although greatly interested in the question of lung expansion in these old cavities, I had no opportunity to operate for chronic empyema until April, 1907. This case, which was, briefly, that of a little girl of 14, who had had a sinus for a year, after the resection of the ninth rib in the posterior axillary line. I carried an incision upward, parallel to the anterior border of the scapula, resected portions of four ribs and found exposed a concave surface of the glistening membrane which bound the lung down in the gutter between the ribs and vertebra, so tightly that it hardly seemed as if there was any lung in the chest at all. On splitting this membrane with the scissors and separating it carefully from the surface of the lung, the lung began to expand and when the child coughed at the close of the operation the red, velvety lung blew up like a soap bubble and came up against the chest-wall, where it remained. The lower angle of the wound was drained. At first there was no discharge, until four or five days after when there was a slight discharge from the breaking down of the blood-clot which ran into the bottom of the chest. I show here pictures (Figs. 1 and 2) of the little girl four years later, after she had grown to be a young lady, and it can be seen that the chest-wall is excellently developed and there is no curvature of the spine.

The second case in which I employed this procedure was an old empyema following an extensive hemorrhage into the chest, hemothorax, resulting from a self-inflicted revolver wound. The patient had a sinus and a chronic discharge ten months after rib resection, for drainage of the infected blood-clot from his chest. In this case the same procedure was followed, the incision running upward and forward from the anterior end of the drainage incision. Five ribs were resected, the thick membrane covering the lung incised and peeled off with the finger, allowing the lung to expand. As the patient coughed, the lung expanded and nearly filled the cavity. A slight discharge persisted, and five months later I found a small cavity two inches in diameter, in the lower part of the chest which was cured by resecting a small portion of the rib. One month later, the wound healed up and has remained in excellent condition since. The patient was a thin, delicate man, who I feel sure would not have survived an extensive operation of the type of Estländer or Schede.

My next cases, 3, 4 and 5, were the result of what I believe to be misguided attempts to cure acute empyema by the method of Thiersch, advocated by Friedrich when he came to this country and spoke before this Association in 1898. He states that rib resection has been abandoned by him in recent, not circumscribed exudates, because, not here necessarily indicated, it requires a longer time and may be more dangerous through the onset of a pneumothorax.

Briefly stated, the method of Thiersch consists of a puncture of the chest-wall, insertion of a large trocar allowing the pus to escape, and the insertion of a Nela-

2. Clinical News, September 1902.
3. Ransohoff: Ann. Surg., 1906.
4. Lloyd, S.: The Treatment of Unresolved Pneumonia, in Science of Medicine and Surgery, 1908, p. 177.

ton catheter of the same size as the trocar to which is attached a collapsible rubber tube which leads into a bottle of fluid at the side of the bed. The Nelaton catheter is fixed air-tight to the chest-wall by the use of rubber tissue and adhesive plaster. The theory is, that when the patient expires, the pus runs out through the tube and on inspiration the collapsible walls of the tube are sucked together and prevent the entrance of air and cause negative pressure in the chest, favoring expansion of the lung. This is one of the numerous methods of securing negative pressure in the chest, the first of which, I believe, was adopted by Bülau; the others have been advocated by Perthes, Van Hook, and numerous

Figs. 1 and 2.—Patient, 18 years old, four years after operation for chronic empyema. Note the development of chest-wall and the fact that there is no curvature of spine.

other writers. In many of them, a current of running water supplied by a Bunsen pump, is employed to cause constant suction of the chest. The use of all these methods is based on what seems a well-founded objection in methods of rib resection and leaving a wide opening, namely, that such an opening allows the free entrance of air into the chest, which tends to press on the surface of the lung to prevent its expansion resulting in chronic pneumothorax and chronic empyema. The last, and probably the most efficient, of these suction methods is that advocated by Robinson of Boston, which consists in trephining the rib and screwing in a threaded metal tube, to which the rubber tube is attached, thus furnishing an absolutely air-tight connection between the chest-wall and the tube. The objection to all these methods, to my mind, is that, while they do provide an air-tight connection for a very short time, the opening made is necessarily small and the masses of fibrin which are so often found in the cavities cannot be removed, and when the tube has finally to be removed, as it always has, the small opening closes over so quickly that a little pus is apt to be left behind, and the case becomes chronic or requires reoperation.

As stated above, in an experience covering eighteen years and a fairly large number of cases, I have almost invariably treated empyema by resection of two or three inches of the ninth or tenth ribs in the posterior axillary line and the insertion of a large tube. Doubtless, in some of these cases, the lesions have failed to heal and have become chronic, but at all events, patients have not come back to me for treatment. It is an interesting commentary on Thiersch's method, at least in my hands, that three cases of chronic empyema requiring subsequent decortication, resulted in the three cases in which I tried it.

The results of free drainage and the use of the large tube are, in my hands, far better than the use of the air-tight methods and the use of the small tube. It is more important to drain the pus and let the air take care of itself than to try to keep out the air at the expense of free drainage of the pus and fibrin. No matter if the air does enter the thorax at first, it is frequently soon prevented from entrance by the pressure of the thick pus-soaked dressing over the end of the tube, which in itself provides a very fair valve, and I believe that the expansion of the lung is more frequently prevented from the reaccumulation of pus from insufficient drainage than by the entrance of air through a large opening.

Patient 3 was a man of 34, on whom Thiersch's method of drainage was attempted in January, 1910. Seven weeks later he had a free discharge and a large cavity treated by resection of five ribs and decortication. The cavity was of good size, entirely lined by thick, tough membrane. The membrane was split vertically over the lung and peeled back and the cavity partially filled it. The patient went home one month after the operation

with a sinus, went to work and worked for nearly a year, but returned January, 1911, with a reaccumulation of pus and a large cavity. I operated again and this time found the membrane very adherent to the surface of the lung which failed to expand after its removal, therefore an extensive resection was done to six ribs allowing the chest-wall to fall in on the lung. A few days later, the patient died of septicemia. Although the decortication in this case was not successful, I feel that, had an extensive rib resection been done in the first place, the patient would have died just one year sooner. The patient had valvular heart disease.

In Case 4 the empyema was drained by Thiersch's method, except that rib trephining was adopted instead of trocar puncture. Six weeks later, after the discharge from the hospital, however, the patient returned with his chest full of pus again and a sinus. In this case, the sinus was on the left side of the chest, and the incision in the membrane for decortication had to be carefully made behind the pericardium. The lung expanded and filled the cavity. Two large tubes, surrounded by gauze, were placed in the lower angle of the wound for drainage. There was very little shock. The gauze and tubes were all removed on the second day, and all the drainage was removed on the eleventh. The patient made an excellent recovery and regained complete expansion of the lung without deformity of the chest or curvature of the spine.

In Case 5, the patient was a delicate man, 20 or 21 years of age. Thiersch's method was applied in a metapneumonic empyema. Three weeks later the patient was running a high temperature; drainage was unsatisfactory and there was a large cavity. Decortication was performed as in the preceding cases. The lung, as in the former cases, came out and filled the cavity. This operation was attended by a good deal of shock. The temperature gradually returned to normal. The lung, however, did not in this case stay up against the chest-wall, and the patient began to have cough and expectoration. He died six weeks after the decortication, apparently of pneumonia of the opposite lung. He was thought by consultants to have tuberculosis, but no tuberculous bacilli were found in the sputum and no autopsy was obtained. In this case, also, although the result was unsatisfactory, I cannot but feel that a more promptly fatal result would have followed an extensive removal of the ribs.

Patient 6 was a middle-aged woman in whom, contrary to my usual custom, a rib resection had been made in the midaxillary line, thus failing to provide adequate drainage in the recumbent and sitting positions. Chronic empyema resulted and decortication was done six months later by the method previously described. The lung expanded well and recovery, though delayed by the slipping in of a drain which was inserted by the physician in charge during convalescence, was complete as soon as this drain was removed at the third operation.

The seventh case was one of abscess of the lung with pyopneumothorax which had existed six weeks and in which, at the primary operation, the lung was found so bound down and covered by the thick membrane that it was thought wise to decorticate it at the time. The operation was completely successful, and the patient made a rapid decovery. A crater-like ulcer on the surface of the inferior lobe was, to my mind, a very interesting finding.

It will be seen that two of these seven cases were fatal. Neither of them, however, was fatal from shock, and I think the same result would have followed any method of treatment.

Beck's method of filling chronic empyema sinuses with bismuth paste has not seemed to me applicable in cases with very large cavities, say two-thirds or three-quarters of the entire pleura and, personally, I have had rather poor results with the insertion of any kind of foreign material in an infected cavity.

In regard to the technic of the operation, the method of the resection of 1½ inches of five or six ribs, through an incision running upward and forward from the anterior end of the old drainage incision, has proved, to my mind, very satisfactory. In slitting up the thickened pleura beneath the ribs, I have had in one or two cases, to grab the intercostal artery, but have been very much surprised to find how little trouble there has been from bleeding. The visceral pleura, which is about a quarter of an inch thick and which is more like the sole of an old rubber shoe than anything else, is carefully incised with a knife over the lower part of the lung. The finger is inserted through the incision and as soon as the soft surface of the lung is felt, is swept to and fro with the pulp of the finger toward the pleura and pressing outward so as to cause the least possible damage to the lung. Then a pair of blunt-pointed scissors is inserted and the membrane slit clear up to the top of the chest, and cleared off from the lung with the finger. A wound of one or two of the air-cells resulted in two or three of my cases, allowing the escape of bubbles of air on exploration, but so small an area of the lung was affected that, apparently, no harm resulted.

In regard to the after-treatment, it is probable that after the patient is put to bed, the lung does retract to a certain extent, but the occasional coughing keeps up the expansion. The thick, pus-soaked dressing, if tightly applied, to my mind, acts as a more efficient valve than any mechanical valve which one could employ. Certainly, in most of my cases, expansion of the lung was marvelously preserved, and in Case 5 I think that failure may have been due to the dressing failing to give us an efficient valve. Change of dressing should be accomplished as rapidly as possible and the tubes removed early; in most instances, I think, on the second or third day.

In the majority of cases, the lung is driven inward so that it extends from the top to the bottom of the chest and at its base is adherent to the diaphragm. This adhesion to the diaphragm, in this class of cases, will have to be broken up in addition to the removal of the membrane covering the lung. In some of the cases, however, the lung, instead of being driven in, is driven both inward and outward, so that it lies contracted along the upper inner wall of the pleura. In these cases, removal of the membrane covering it will be entirely sufficient and there will be no diaphragmatic adhesions to be attended to.

It is possible that an intercostal incision and the use of the modern rib retractor may simplify this operation, but as the incision in the pleura has got to be in the long axis of the lung, it seems to me that multiple rib resection would be better. I have not had an opportunity to employ either positive or negative pressure as an aid in these operations and do not believe that it is necessary if, as should always be done, the ether is taken off as early as possible, and the patient allowed to cough at the moment that the membrane has been stripped off the lung. This facilitates expansion in a wonderful manner. The intratracheal insufflation method of Melzer and

Auer, I believe, will be a distinct aid in these lung cases. One feature which renders it valuable is that it is possible to blow all the ether out of the lung with fresh air at the close of the operation, so that the patient almost immediately comes out. I have not had an opportunity to employ this method myself as yet, but intend to do so at the earliest opportunity. My colleague, Dr. Nichols, has employed this method in one case of decortication and states that he was astonished at the way the lung expanded and filled the cavity when the visceral pleura was removed. His patient made an excellent recovery.

527 Beacon Street.

PLASTIC OPERATIONS ON THE FACE*

J. SHELTON HORSLEY, M.D.
Professor of Principles of Surgery and Clinical Surgery in the Medical College of Virginia; Surgeon to Memorial Hospital
RICHMOND, VA.

Surgical operations are usually designed to save life or to increase function. Even plastic operations on other parts of the body than the face have as their chief object the restoration of function. Operations on the vaginal outlet are performed for the purpose of correcting malpositions of the uterus or of returning the bladder and rectum to their proper position and so rendering these organs better able to functionate normally. Plastic operations on the hands or feet for deformities, on the bowel or bladder for fistulous openings, or on the throat or mouth for congenital defects, are intended to restore to usefulnss the parts affected. Plastic operations on the face, however, are done chiefly for their cosmetic effect, as the function of no organ is materially altered by the facial deformities which such operations are designed to correct.

Fig. 1.—J. M., aged 10. Deformity of the face from burn; from photograph taken two days before first operation.

Fig. 2.—J. M., after lower lip and part of the uper lip had been formed from a flap taken from the left shoulder and arm. A flap is now being transferred from his right arm to cover the right eye. The eyelashes have been shaved and the eyelids closed by suture so the flap is transplanted over both lids at one time.

Fig. 3.—Patient J. M. a few days after flap had been cut from its base on the arm.

While the correction of facial deformities cannot be classed as life-saving, such procedures when successful benefit not only the patient, but the community. An operation for appendicitis, for instance, may save an individual life, but usually few outside of the patient's friends and relatives care anything about it. But the surgeon who corrects a cicatricial contraction about the face or operates on a bad double harelip should have the gratitude of every one who has had to see these unfortunate patients, and is at least as much of a public benefactor as the proverbial philanthropist who causes two blades of grass to grow where only one grew before.

This branch of surgery, then, has to do with improving the patient's personal pulchritude, and the length of the incision, the position of the scar, and the coaptation of the skin are of prime importance instead of being as in most operations matters of secondary consideration. Herein plastic operations on the face differ both in technic and in results from other surgery.

Deformities which make plastic operations on the face necessary may be classed under three heads: First, congenital deformities, of which the most common is harelip; second, deformities produced by injury or disease, which may be subdivided into contractions following ulcers or burns and mechanical trauma; third, deformities that result from operations for removal of cancer or lupus. This third group differs somewhat from the second. Though it may be said to occur as the result of disease, the immediate defect is one that has been purposely made by the surgeon under aseptic precautions and, in a manner, he may control the character of the defect. No operation for cancer should ever be done with any other object in view than complete extirpation of the cancerous mass; still at times the incisions may be so shaped as to make a resulting wound that will not leave an unsightly scar while sacrificing nothing to thoroughness.

Without attempting to give a detailed report of cases, I shall describe some operations and results that may serve to illustrate the second two of these three different classes of cases that have been grouped under the heading of plastic operations on the face.

Deformities produced by disease, and particularly by burns, are peculiar from their marked tendency to con-

* Read by invitation at the meeting of the South Carolina Medical Association, Charleston, S. C., April 19, 1911.

traction. Thiersch's grafts do not prevent contraction after a burn. The effort by Nature to reproduce a corium results in reformation of cicatricial tissue and while the raw surface may be covered by the epithelium of the grafts the contraction recurs in time as bad as it

Fig. 4.—J. M.; flap over the eyes has been divided and stitches removed. The upper eyelids were satisfactory, but there was not enough of tissue on lower lid to prevent eversion. Another flap was taken, which is shown in Figure 5.

Fig. 5.—Patient J. M. after twenty operations had been performed on him. Both upper and lower eyelids have been satisfactorily built up from flaps from the arm and by Wolfe's grafts from the thigh.

was before. The whole thickness of the skin must be transplanted in places where contraction is to be avoided. This may be done by the Krause or by the Wolfe method of transplanting strips of the whole thickness of the skin taken from the thigh or other portions of the body. As these strips require more nourishment than the thin Thiersch grafts the pieces have to be smaller, as the vessels may enter and nourish a small strip of skin, whereas a larger piece would die. This method cannot be used satisfactorily in extensive deformities produced by burns about the face, as the scars that form between the strips are very unsightly. A boy, whose picture I present (Figs. 1 to 5), was burned by the explosion of a keg of powder about six months before he came under my treatment. Contraction was so great that the mouth could not be closed and saliva constantly dripped over his clothing. There were raw ulcers on the cheeks

Fig. 6.—Method of using skin from the back of the hand for correcting deformities and remedying defect on hand by replacing whole skin from the abdomen.

Fig. 7.—R. E. Noma following typhoid fever. The left half of lower lip, mucous membrane and underlying portion of jaw-bone sloughed away, so the under surface of tongue could be seen through defect. The photograph was taken after first operation in which lip was built up by a quadrilateral flap from the cheek which was turned into the defect.

which would not heal and the eversion of the eyelids from the contraction gave the patient a most repulsive appearance. The lips were freed and the scar tissue dissected away down to the muscles. Care must be taken in such cases to dissect away all of the connective tissue and at the same time not to go deep enough to injure the filaments of the facial nerve. The lips were built up by a flap taken from the arm and shoulder,

which was sutured in position with the base of the flap attached to the arm and the arm fixed over the head for ten days with plaster of Paris. The base of the flap was then cut away. After a long series of operations the deformities were mostly overcome. They were remedied chiefly by taking flaps from various portions of the arm in the manner just described and partly by transplanting whole pieces of skin to fill out small defects. Flaps of skin may be transplanted from any portion of the body by first attaching them to the hand, then cutting away the flap and transplanting this to the face or by first using the skin on the back of the hand and then covering the defect in the hand with whole skin from the abdomen (Fig. 6).

Fig. 8.—R. E., from photograph taken soon after a flap of mucous membrane was raised and attached to the newly constructed lip to form a vermilion border.

Fig. 9.—R. E., from a photograph taken about one year after second operation.

Diseases such as noma produce very unsightly defects and are best corrected by transplanting flaps from the immediate neighborhood if possible. In one case (Figs. 7, 8 and 9) half of the lower lip with the underlying bone and mucous membrane sloughed away as the result of noma. This was repaired by a quadrilateral flap from the cheek, which was turned into the defect. Later a flap of mucous membrane from the inside of the lip formed a very satisfactory vermilion border. In such instances the problem of contraction does not materially affect the result.

Another case (Figs. 10 and 11) presents a rather unusual deformity which resulted from a fracture of the frontal bone and a sloughing away of the anterior wall of the frontal sinus. This left a marked defect which exposed the frontal sinus and made a deep cavity in the forehead. After finding that the communication between the floor of the frontal sinus and the nose was open, two small flaps were turned in from the margins of the defect so that the skin surface formed the anterior wall of the frontal sinus. This corrected the depression and a U-shaped flap taken from the forehead covered the raw surface of the flaps that had been turned in. The defect left by this flap was corrected by undermining the skin and sliding it over. The result is shown in Figure 11.

Fig. 10.—E. W. S., from photograph taken before operation, showing defect following fracture of frontal bone and sloughing away of anterior wall of frontal sinus.

Fig. 11.—E. W. S., from photograph taken about eight months after operation.

The principles which might be said to underlie plastic operations of the face are, first of all, a careful mapping out of the procedures necessary to correct the deformity

in each case. Asepsis cannot be maintained and prompt healing will occur only when the tissue is properly nourished and gently handled. Rough handling or lack of consideration for the nutrition of the flaps will result disastrously no matter how accurately the defect is covered. The flaps should always be taken a little larger than seems necessary, particularly in remedying deformities resulting from burns. No dressing should be placed on these wounds unless there is considerable bleeding; in this case a dry compress may be used for twenty-four hours and should then be removed. The raw surface should be dusted with boric acid powder, which forms a scab, and usually quick healing results. If a dressing is put on these wounds the secretion from the nose, mouth or eyes will be absorbed by the dressing and a septic poultice results, whereas antiseptic scabs are formed by incorporation of antiseptic powder into the coagulated serum and the wound is soon sealed and protected from the air. The suturing should be accurate, not tight enough to constrict, but tight enough to approximate the surfaces closely. I use a fine curved reversed Hagedorn needle and fine silk, which leaves the most inconspicuous scar. Where tension is great silkworm-gut is employed as the main suture for harelip operations. Sutures should be removed as soon as possible. In harelip where there is considerable strain on the stitches they have to be left longer than in operations where there is no tension, but here some of the stitches can be removed in six days and all should be out within eight or nine days. In other locations the stitches can usually be removed in five days. No plaster or other dressing should ever be placed on the harelip wound, but relief of tension on the sutures can be secured by two strips of adhesive plaster, which run from the cheek across the nose to the opposite side of the forehead. When these are drawn tightly, complete relaxation of the upper lip is obtained.

421 West Grace Street.

A METHOD FOR GRADUAL AUTOMATIC OCCLUSION OF THE LARGER BLOOD-VESSELS AT ONE OPERATION *

J. M. NEFF, M.D.
SPOKANE, WASH.

Stimulated by the work of Halsted and Matas, I and my assistants recently undertook some experiments with the object of working out a method for the gradual automatic occlusion of the larger blood-vessels at one operation.

Halsted used aluminum bands on the arteries for the purpose of permanently occluding their lumina, completely or in part, while Matas employed them for testing the efficiency of the collateral circulation. In neither of these methods, however, nor in any other that we know of, is there any definite and well-directed attempt to bring about gradual automatic occlusion in one operation, the thing above all others needed in arterial surgery for the treatment of aneurysm and tumors involving the great vessels.

It was for the purpose of establishing a principle, which might be at least a step toward the solution of this problem, that we devised the clamp described below. In the larger number of our experiments, we used the clamp called Model 2 (shown in Figures 1, 2 and 3), because of its simplicity of construction and application. It consists of two pieces of sheet aluminum, No. 13 B. & S. sheet metal gauge, hinged at one end as shown in Figure 1. For the common carotid artery of the dog, each blade is 5/16 inch wide and 7/8 inch long. The edges of the opposing surfaces of the blades are carefully rounded off, so that they will not injure the vessel which passes through the space (*c*) of the clamp. The deep groove (*f*) in the end of each blade, is for the catgut which is wound in layers in one or both of them and serves to separate the blades after the clamp is applied to the vessel. The short set-screw (*e*) was incorporated in the clamp in the early part of the work, for the purpose of preventing the blades from coming together, and thus cutting through the vessel after the catgut was absorbed. We now consider the set screw unnecessary and believe that gradual complete occlusion and division of the vessel is the ideal result.

The grooves (*d*) next to those for the catgut are for a rubber elastic band, the purpose of which is to approximate the two blades during the gradual absorption of the catgut. The elastic, therefore, must be of the very best dental ligature material to tolerate encapsulation under tension for a prolonged period of time.

Next to the hinge (*a*) are the shallow grooves (*b*) for a second rubber band. The object of this band is not so much to draw the blades together as to prevent the artery from slipping into the narrow part of the clamp next to the hinge. Figure 2 shows the clamp on the flat with grooves for the rubber bands and catgut.

Figure 3 shows the clamp with artery (*c*), rubber bands (*b* and *d*) and catgut (*e*) in position.

APPLICATION

The application is exceedingly simple. The clamp and rubber bands are sterilized by boiling, and No. 1 plain sterile catgut is wrapped in the end groove of one of the blades. This must be carefully done, three or four layers being placed one on the other in the groove. The ends of the gut are then tied together on the outer surface of the blade. The clamp is now applied to the artery and the blades pressed together as closely as the catgut will permit. If the pulsation distal to the clamp is markedly weakened, the latter is removed and two or three layers of gut wrapped in the end groove of the other blade. The clamp is again applied to the artery (Fig. 3), and two turns of No. 9 dental elastic band (*d*) are placed around both blades in the groove. A section of small-sized rubber tubing or a single turn of No. 9 elastic band (*b*) is slipped over the hinged end, the muscles and fascia then sutured with catgut over the clamp and the operation is complete.

MODUS OPERANDI

The principle underlying the action of the clamp is the gradual absorption of the catgut between the ends of the blades and the consequent gradual automatic approximation of these blades by the elastic bands. The artery in the grasp of the clamp is necessarily gradually occluded as the blades come together, the occlusion taking place so slowly that the collateral circulation has an opportunity to develop. After the catgut has completely absorbed and the blades are together, all tissue in the grasp of the clamp undergoes pressure atrophy and is absorbed. This we consider an ideal result: the vessel cut in two and occluded by the clamp, each of the ends tapering to a point and united by a cord of firm fibrous tissue.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

We have learned from our experiments that the catgut is entirely absorbed in from three to four weeks and that the ideal result mentioned above is obtained in the majority of cases.

We do not know whether the portion of catgut between the blades is actually absorbed or slips out layer by layer, coincident with the absorption of each layer on the surface. The same result, however, is brought about in either case, viz., the gradual approximation of the two blades, by the rubber band as each successive layer of gut is absorbed.

Model 1 (shown in Figure 4), with catgut wound around the ends of one or both blades, or decalcified bone between the blades, transfixed by a pin to prevent its displacement, was used in most of our early experiments. The rubber elastics have practically the same arrangement as in Model 2, except that there are no definite grooves for them or the catgut. We believe that catgut is superior to decalcified bone as a separating agent, because it can be applied to the blades in layers, thus giving greater assurance of gradual absorption. A decided advantage of Model 2 is the deep groove for the catgut. This deep groove (*f*, Figure 1), with the end flange partly filed off, gives a narrow shank on which to wind the gut, affording a minimum surface between the blades, where absorption is slow and uncertain, and a maximum outer surface where absorption readily occurs.

When decalcified bone is used the underlying principle is exactly the same as with catgut; the bone is gradually absorbed and allows the blades to slowly come together.

Model 3 (illustrated in Figure 5) was used in only one experiment, so we have not had sufficient experience with it to draw conclusions as to its use. It consists of two separate blades (*d* and *e*), the opposing edges of which are rounded off to prevent cutting of the vessel. To the under blade (*e*) are fixed two upright threaded posts (*f*) which pass through two corresponding perforations in the upper blade (*d*). Two pieces of sterile decalcified bone (*c*) of proper thickness, are drilled and placed one on each of the upright posts (*f*) next to the blade (*e*). This blade is now put under the artery so that the latter occupies the position (*a*) shown in the illustration. The upper blade (*d*) is then placed in position and a small spiral spring (*b*) slipped over each of the upright posts (*f*). Now by screwing the nuts (*g*) into position, the upper blade (*d*) is pressed firmly against the decalcified bone (*c*), and as the latter is gradually absorbed, it will be slowly approximated to the blade (*e*). The disadvantages of this clamp are that it is complicated and occupies much more room than Model 2. Catgut can be used on each of the posts instead of decalcified bone.

Model 4 (shown in Figure 6) was used in only one case; it seems to possess no advantage over the simpler models, 1 and 2. A glance at the illustration will show that the working principle is the same, but instead of the rubber bands a spiral spring (*e*) is used to approximate the two blades. Magnesium, which is slowly absorbed by the tissues, can be used in the construction of the clamp instead of aluminum.

We have used the clamps in thirty-four experiments on dogs, twenty-seven times on the common carotids, five times on the aorta and twice on the femorals. Four of the aorta subjects died, one from general peritonitis, one from hemorrhage, one from double pyonephrosis, and one from secondary hemorrhage plus infection. Of

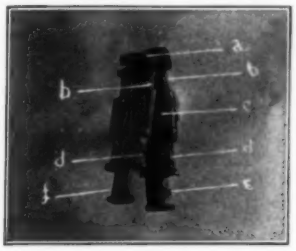


Fig. 1.—Clamp model 2: a, hinge; b, groove for rubber band; c, space for artery; d, groove for rubber band; e, set screw; f, groove for catgut.

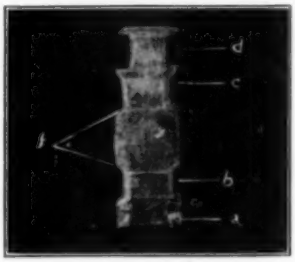


Fig. 2.—Clamp model 2: a, hinge; b, groove for elastic band; c, groove for elastic band; d, groove for catgut; f, space for artery.

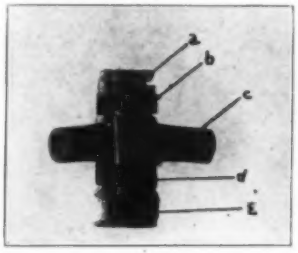


Fig. 3.—Clamp model 2: a, hinge; b, rubber elastic; c, artery; d, rubber elastic; e, catgut wound around one blade.

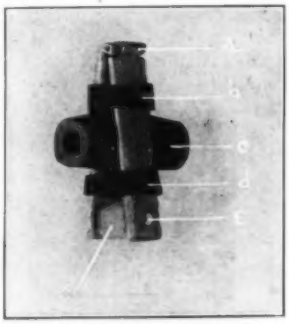


Fig. 4.—Clamp model 1; a, hinge; b, rubber band; c, artery; d, rubber band; e, pin through decalcified bone; f, decalcified bone.

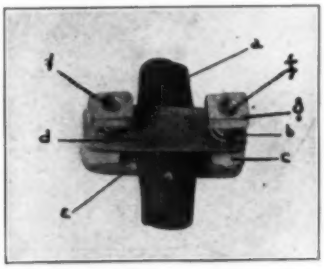


Fig. 5.—Clamp model 3: a, artery; b, spiral spring; c, decalcified bone; d and e, blades of clamp.

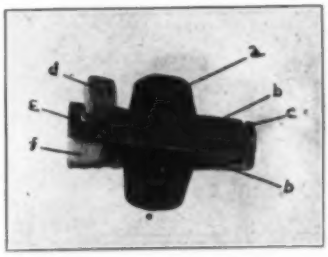


Fig. 6.—Clamp model 4: a, artery; b, blades of clamp; c, hinge; d, curve pin transfixing bone; e, spiral spring; f, decalcified bone.

the thirty remaining cases, complete occlusion was found at second operation in twenty-two, partial occlusion in seven and none at all in one.

Plain sterile catgut was used on one or both blades of the clamp in twelve cases and was completely absorbed after thirty and one-half days (average) in eleven cases. In the remaining case all of it was absorbed, except a very small fragment between the blades. Iodin catgut, after Bartlett's method, was used in fifteen cases and was found completely absorbed after twenty-eight days (average) in only three. Of the remaining twelve cases, it was in various stages of partial absorption in eleven, and showed no evidences of absorption in one.

Of the fourteen cases of complete absorption there was only one in which the vessel was not entirely occluded, the cause of failure in this one being too great separation of the blades by the set-screw.

In the cases in which the iodin catgut was only partly absorbed, it had been in the tissues, on an average, thirty-three days for each experiment.

Decalcified bone was used in three of the thirty experiments. In two cases it was completely absorbed after thirty-five days and in one, only a small fragment remained after twenty-four days. In only one of the thirty cases was there secondary hemorrhage and that was due to injury

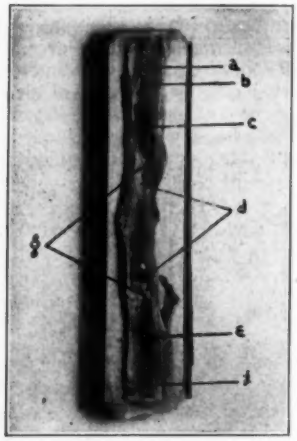


Fig. 7.—Dog 12; left common carotid. Exp. 1; a, above occlusion; b, collateral; c, clot; d, fibrous tissue between occluded ends; e, clot; f, below occlusion; g, occluded ends of artery.

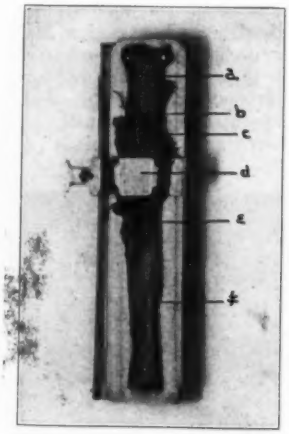


Fig. 8.—Dog 13; right common carotid. Exp. 2; a, artery above occlusion; b, collateral; c, clot; d, clamp in place; e, clot; f, artery below occlusion.

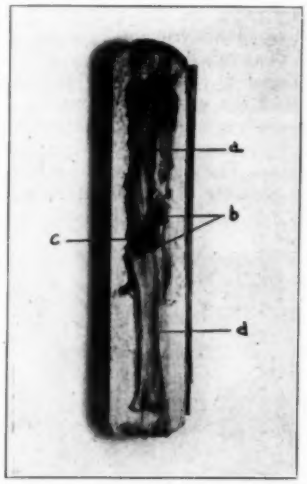


Fig. 9.—Dog 13; left common carotid. Exp. 3; a, above occlusion; b, occluded ends; c, portion of artery in grasp at clamp; d, below occlusion.

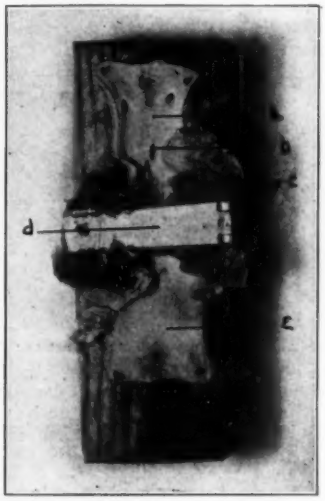


Fig. 10.—Dog 16; aorta. Exp. 6; a, above occlusion; b, collateral; c, fibrous capsule around clamp; d, clamp in position; e, below occlusion.

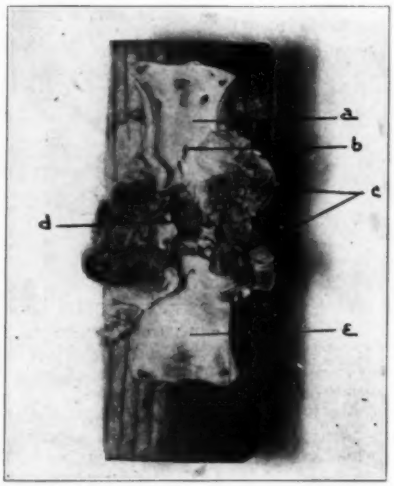


Fig. 11.—Dog 16; aorta. Exp. 6; a, aorta above occlusion; b, collateral; c, fibrous capsule around clamp; e, below occlusion; f, fibrous tissue between occluded ends.

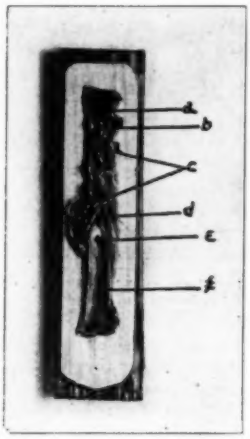


Fig. 12.—Dog 18; left common carotid. Exp. 9; a, above occlusion; b and d, occluded ends of artery; c, fibrous tissue between occluded ends; e, collateral; f, below occlusion.

REPORT OF EXPERIMENTS

Experiment 1.—Dog 12. Yellow male, weight 42 pounds. Operation, March 22, 1911. Right common carotid ligated.

Clamp Model 1, with plain No. 2 catgut on both blades applied to left common carotid. Second operation, April 20, 1911. Primary union of wound. Clamp found free in connective tissue capsule. Catgut entirely absorbed and blades together. Section of artery removed and split longitudinally from both ends (Fig. 7). Artery completely occluded and ends (*g*) united by fibrous tissue (*d*). A small clot (*c* and *e*) present in each occluded end.

EXPERIMENT 2.—Dog 13. Brindle bull, weight 50 pounds. Operation, March 24, 1911. Clamp Model 1, with plain No. 2 catgut on one blade applied to right common carotid. Second operation, April 22, 1911. Catgut on outside of clamp entirely absorbed, but enough left between blades to prevent complete occlusion of artery. Clamp removed, fresh catgut wound around one of the blades, and reapplied to proximal portion of artery. Third operation, May 26, 1911. Catgut completely absorbed, and blades together. When the clamp was removed, weak pulsation was felt in distal segment. Section of artery removed and examined (Fig. 9). Portion of artery in grasp of clamp (*c*) greatly narrowed almost to the point of obliteration. No intravascular clots.

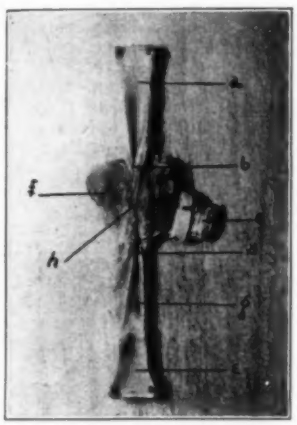


Fig. 13.—Dog 19; right common carotid. Exp. 10; a, below occlusion; b and d, occluded ends of artery; c, clamp in position; e, above occlusion; f, fibrous capsule around clamp; g, clot; h, fibrous tissue between ends.

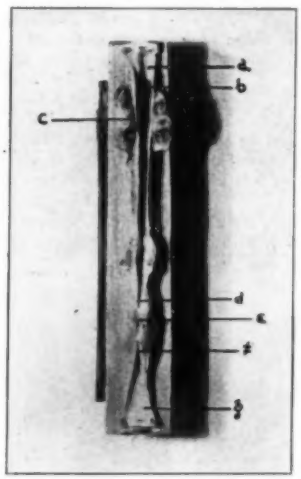


Fig. 14.—Dog 19; left common carotid. Exp. 11; a, above occlusion; b, clot; c, site of previous compression; d, occluded end of artery; e, fibrous tissue between ends; f, occluded end; g, below occlusion.

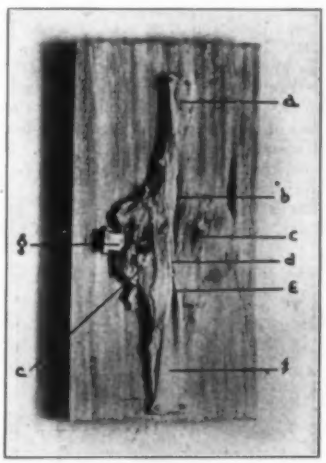


Fig. 15.—Dog 20; right common carotid. Exp. 12; a, above occlusion; b and e, occluded ends of artery; c, fibrous capsule around clamp; d, fibrous tissue between ends; f, below occlusion; g, clamp in position.

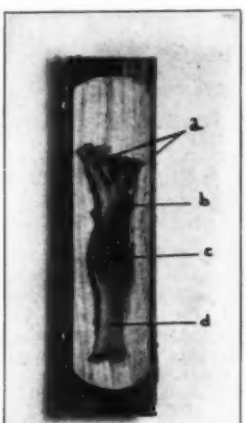


Fig. 16.—Dog 20; left common carotid. Exp. 13; a, ext. and int. carotids; b, above occlusion; c, dilatation at site of compression; d, below occlusion.

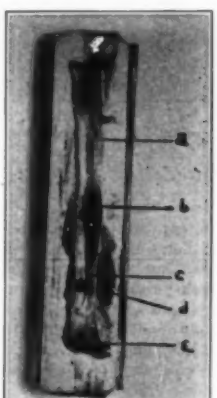


Fig. 17.—Dog 21; left common carotid. Exp. 15; a, below occlusion; b, clot; c, site of occlusion; d, part of fibrous capsule around clamp; e, above occlusion.

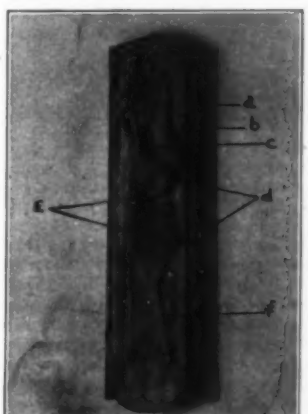


Fig. 18.—Dog 23; right common carotid. Exp. 18; a, collateral; b, above occlusion; c, clot; d, occluded ends of artery; e, fibrous tissue between ends; f, below occlusion.

catgut on one blade applied to right common carotid. Second operation, April 22, 1911. Primary union of wound. Clamp embedded in fibrous capsule. Catgut entirely absorbed and blades together. Section of artery removed and examined (Fig. 8). It was completely occluded at site of compression (*d*) and ends were united by dense fibrous tissue. A small clot (*c* and *e*) filled each of the occluded ends.

EXPERIMENT 3.—Dog 13. Operation, March 24, 1911. Model 1 clamp with plain No. 2 catgut on one blade applied to left

EXPERIMENT 4.—Dog 14. Small puppy. Operation, March 25, 1911. Clamp Model 1, with plain catgut on both blades applied to abdominal aorta below origin of renal arteries. Thoracic duct injured during the application. Dog died March 27 of general peritonitis. No changes found in aorta.

EXPERIMENT 5.—Dog 15. White male, weight 28 pounds. Operation, March 28, 1911. Clamp Model 1 with decalcified bone separating blades applied to abdominal aorta. Dog developed a paraplegia, April 5, and died April 8. Necropsy

showed general peritonitis, and hemorrhage from a perforation of the aorta beneath the clamp.

EXPERIMENT 6.—Dog 16. Female bird dog, weight 40 pounds. Operation, April 3, 1911. Clamp Model 1, with decalcified bone separating blades applied to abdominal aorta. Second operation, May 18, 1911. Primary union of wound. Pulsation in femorals had been absent for three weeks. Aorta exposed, clamp imbedded in fibrous capsule (*c*, Fig. 10), decalcified bone completely absorbed and blades together. Section of aorta removed and examined (Figs. 10 and 11). Artery completely occluded at site of compression (*d*, Figs. 10 and 11) and portion of artery between the blades represented by a thin fibrous ribbon (*d*, Fig. 11). No intravascular clots. The vessel was closed on each side of clamp by fibrous union of its walls. The collaterals on both sides of the occlusion were large and numerous (*b*, Figs. 10 and 11).

EXPERIMENT 7.—Dog 17. Small white female. Weight 28 pounds. Operation, April 6, 1911. Clamp Model 3, with two pieces of decalcified bone separating blades, applied to abdominal aorta. Dog died April 16, 1911. Necropsy showed double pyonephrosis, with almost complete destruction of left kidney. Artery unchanged.

EXPERIMENT 8.—Dog 18. Small black female, weight 24 pounds. Operation, April 8, 1911. Clamp Model 4, with decalcified bone separating blades, applied to right common carotid. Second operation, May 2. Primary union of wound. Clamp in fibrous capsule. Nearly all of the bone was absorbed but a small amount remained between the blades. Very weak pulsation could be felt in artery distal to clamp.

EXPERIMENT 9.—Dog 18. Operation, April 8. Clamp Model 1 with decalcified bone separating blades applied to left common carotid. Second operation, May 2. Primary union of wound. Clamp embedded in fibrous capsule, bone completely absorbed and blades together. Section of artery removed and examined (Fig. 12). Artery is perfectly occluded at site of compression and each end tapers to a point (*b* and *d*). Ends united by fibrous tissue (*c*). No intravascular clots.

EXPERIMENT 10.—Dog 19. White bull terrier. Weight 32 pounds. Operation, April 13, 1911. Clamp Model 1, with plain No. 1 catgut on both blades applied to right common carotid. Second operation, May 5. Primary union of wound. Clamp embedded in fibrous capsule. Catgut was partially absorbed from both blades but not sufficiently to completely obliterate artery. Clamp removed and reapplied with fresh catgut, No. 1 plain, to proximal portion of artery. Third operation, June 2. Small superficial sinus at upper angle of wound not communicating with clamp. Clamp imbedded in fibrous capsule (Fig. 13, *f*). Catgut completely absorbed and blades together. No pulsation in distal segment. Section of artery removed and examined (Fig. 13). Vessel completely occluded at sight of compression, each end tapering to a point (*b* and *d*), small clot (*g*) in distal segment. Ends united by fibrous tissue (*h*).

EXPERIMENT 11.—Dog 19. Operation, April 13, 1911. Clamp Model 1 with plain No. 1 catgut on both blades applied to left common carotid. Second operation, May 5. Clamp in fibrous capsule. Catgut partially absorbed from both blades but not sufficiently to obliterate pulsation. Clamp removed and reapplied with fresh plain catgut to proximal portion of artery. Third operation, June 2. Clamp in fibrous capsule, catgut completely absorbed and blades together. Section of artery removed and examined (Fig. 14). Artery perfectly occluded at site of compression, and each end tapers to a point (*d* and *f*). Ends united by fibrous tissue (*e*). Distal segment contains an organizing blood-clot (*b*) extending from point of occlusion (*d*), to point of previous application of clamp (*c*).

EXPERIMENT 12.—Dog 20. White female bull. Weight 28 pounds. Operation, April 14, 1911. Clamp Model 1, with No. 1 iodin catgut on both blades applied to right common carotid. Second operation, May 6. Clamp in fibrous capsule and catgut partly absorbed. Weak pulsation distal to clamp. Clamp removed and one of Model 2 with No. 0 iodin catgut on one blade applied to proximal portion of artery. Third operation, June 3. Primary union. Clamp in fibrous capsule (*c*, Fig. 15). Catgut entirely absorbed and blades together. Section of artery removed and examined (Fig. 15). Artery completely occluded at site of compression and each end tapers to a point (*b* and *e*). Distal segment contains a small organized blood-clot. Ends united by fibrous tissue.

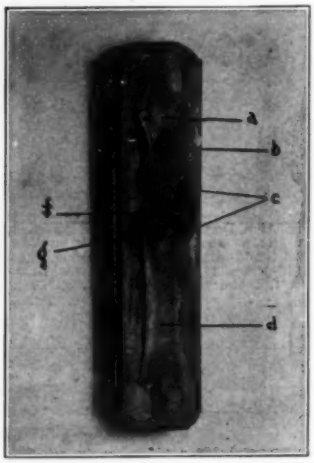


Fig. 19.—Dog 23; left common carotid. Exp. 19; a, above occlusion; b, clot; c, occluded ends of artery; d, below occlusion; f, fibrous tissue between ends of artery; g, point of perforation.

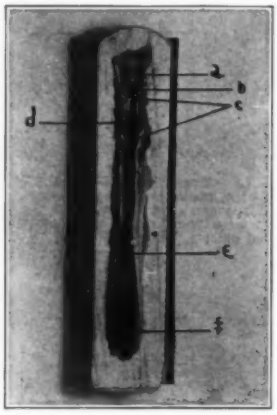


Fig. 20.—Dog 24; right common carotid. Exp. 20; a, above occlusion; b, collateral; c, occluded ends of artery; d, fibrous tissue between occluded ends; e, clot; f, below occlusion.

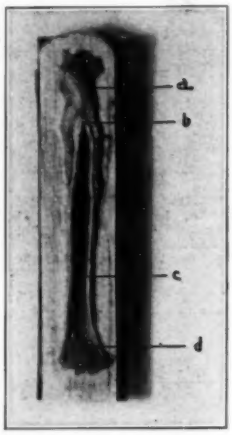


Fig. 21.—Dog 24; left common carotid. Exp. 21; a, fibrous tissue between occluded ends; b, occluded end of artery; c, clot; d, artery below occlusion.

EXPERIMENT 13.—Dog 20. Operation, April 14, 1911. Clamp Model 1, with No. 1 iodin catgut on both blades, applied to left common carotid. Second operation, May 6, clamp in fibrous capsule and catgut partly absorbed from both blades. Section of artery removed and examined (Fig. 16). The artery between the blades was not obliterated but instead was considerably dilated when the pressure was removed (*c*, Fig. 16). With the clamp in place the vessel was occluded by approximation of the walls, but when removed it expanded like a fusiform aneurysm. A small clot filling the lumen of the vessel was loosely attached at the site of compression.

EXPERIMENT 14.—Dog 21. Female brindle bull. Weight 46 pounds. Operation, April 23, 1911. Clamp Model 2 with No. 0 iodin catgut on both blades applied to right common carotid artery. Second operation, May 26. Pulsation present distal to compression, so clamp was left in place. Third operation,

June 9. Clamp in fibrous capsule, pulsation in distal segment almost as strong as in proximal. Practically no absorption of catgut. The iodin catgut was removed from the clamp and one blade wound with No. 2 plain gut.

EXPERIMENT 15.—Dog 21. Operation, April 23. Clamp Model 2, with No. 0 iodin catgut on both blades applied to left common carotid artery. Second operation, May 26. Clamp in fibrous capsule, catgut partially absorbed and blades almost together. No pulsation distal to clamp. Section removed and examined (Fig. 17). The portion of artery in the grasp of the clamp (*c*) greatly narrowed, and obliteration of the lumen in progress. In distal segment there is an organizing clot (*b*) filling the lumen.

EXPERIMENT 16.—Dog 22. Black and tan male. Weight 18 pounds. Operation, April 24, 1911. Clamp Model 2, with No. 0 iodin catgut on one blade applied to right common carotid. Second operation, May 29. Pulsation present distal to clamp. Catgut partly absorbed but not sufficiently to occlude artery. Clamp left in place. Third operation, June 14. Clamp in fibrous capsule. Catgut almost entirely absorbed but just sufficient of it left between blades to prevent obliteration of artery. Very feeble pulsation distal to clamp. Section of artery removed and examined. Artery was practically occluded by approximation of its walls in grasp of clamp. On longitudinal section, however, it exhibited practically no change except a darkening of the intima at site of compression.

EXPERIMENT 17.—Dog 22. Operation, April 24, 1911. Clamp Model 2, with No. 0 iodin catgut on one blade applied to left common carotid. Second operation, May 29. Catgut partly absorbed but not sufficiently to stop pulsation. Clamp left in place. Third operation, June 14. Primary union of wound. Clamp in fibrous capsule. Catgut almost completely absorbed but enough left between blades to prevent obliteration of artery. Feeble pulsation distal to clamp. Section of artery removed and examined. Same description applies here as to specimen removed from experiment 16.

EXPERIMENT 18.—Dog 23. Female bird dog. Weight 40 pounds. Operation, April 27, 1911. Clamp Model 2, with No. 0 iodin catgut on both blades applied to right common carotid. Second operation, May 18. Primary union of wound. Clamp in fibrous capsule. All of the catgut had been absorbed from one blade and most of it from the other, allowing the blades to come together. Section removed and examined (Fig. 18). The artery was completely occluded at site of compression, and the ends (*d*) closed by organic union. Ends united by fibrous tissue (*e*). Small clot (*c*) in distal end.

EXPERIMENT 19.—Dog 23. Operation, April 27, 1911. Clamp Model 2, with No. 0 iodin catgut on both blades applied to left common carotid artery. Second operation, May 18. Hematoma, the size of a small orange, present in neck beneath scar. Three days before operation, dog was kicked in neck during a fight, which accounted for the hemorrhage. Left common carotid exposed. Clamp found free from artery. About half of catgut had been absorbed from both blades, permitting them to come close together. Section of artery removed and examined (Fig. 19). Artery was perfectly occluded at site of compression (*f*). Distal end containing a small clot (*b*) was occluded by a fibrous union of its walls (*c*). Proximal end too was occluded by organic union (*e*); except at one point (*g*) in the line of union, from which hemorrhage had taken place. This rupture had evidently been caused by the impact of the clamp against the vessel end when the dog was kicked.

EXPERIMENT 20.—Dog 24. White puppy. Weight 25 pounds. Operation, April 27, 1911. Clamp Model 2, with No. 0 iodin catgut on both blades applied to right common carotid. Second operation, May 29. Primary union of wound. Clamp in fibrous capsule. Catgut on both blades was almost entirely absorbed and blades were together. Section removed and examined (Fig. 20). Artery completely occluded at site of compression (*d*) each occluded end tapering to a point (*c*). Ends united by fibrous tissue (*d*). In proximal segment is a clot (*c*) which fills the vessel.

EXPERIMENT 21.—Dog 24. Operation, April 27. Clamp Model 2 with No. 0 iodin catgut on both blades applied to left common carotid. Second operation, May 29. Primary union of wound. Clamp in fibrous capsule. All of the catgut on one blade was absorbed and all but one layer from the other. Blades were together. Section removed and examined (Fig. 21). Vessel was completely occluded at site of compression and proximal end tapered to a point (*b*). Beyond proximal end was firm fibrous tissue (*a*). A clot (*c*) completely filled this segment of the artery. The distal end was not included in the excised portion.

EXPERIMENT 22.—Dog 25. Yellow male. Weight 45 pounds. Operation, May 3, 1911. Clamp Model 2, with No. 0 iodin catgut, applied to right common carotid. Second operation, May 31. In lower portion of wound a sinus leads down to situation of clamp. Clamp free from artery, catgut entirely absorbed and blades together. No pulsation beyond clamp. Section removed and examined (Fig. 22). Artery completely occluded, each end tapering to a point, (*e* and *c*). The ends were united by fibrous tissue (*d*). In proximal segment a clot (*f*) completely fills the lumen.

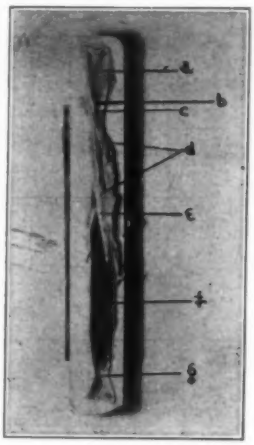


Fig. 22.—Dog 25; right common carotid. Exp. 22; a, above occlusion; b, collateral; c and e, occluded ends of artery; f, clot; g, below occlusion; d, fibrous tissue between ends.

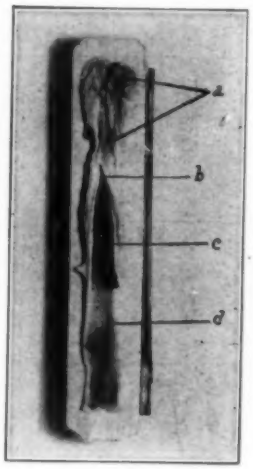


Fig. 23.—Dog 25; left common carotid. Exp. 23; a, fibrous tissue between occluded ends of artery; b, occluded proximal end; c, clot; d, artery below occlusion.

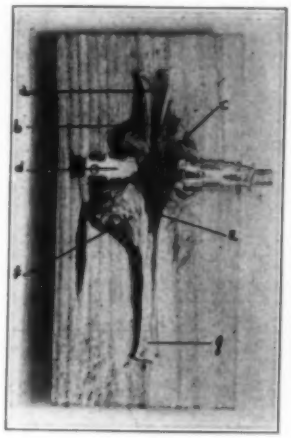


Fig. 24.—Dog 27; right common carotid. Exp. 26; a, above occlusion; b, clot; c, portion of artery in clamp; d, clamp in position; e, clot; f, fibrous capsule around clamp; g, below occlusion.

EXPERIMENT 23.—Dog 25. Operation, May 3, 1911. Clamp Model 2, with No. 0 iodin catgut on one blade, applied to left common carotid. Second operation, May 31. Primary union of wound. Clamp in fibrous capsule and blades together. The catgut was entirely absorbed. Specimen removed and examined (Fig. 23). Vessel completely occluded and proximal segment tapered to a point (*b*). In this portion of the artery was a clot (*c*) which completely filled the lumen. Beyond the occluded end is dense fibrous tissue (*a*). The distal segment is not included in the specimen.

EXPERIMENT 24.—Dog 26. Black female, weight 24 pounds. Operation, May 5, 1911. Clamp Model 2, with No. 0 iodin catgut on both blades applied to right common carotid. Second operation, June 2. Weak pulsation felt distal to clamp. Catgut on blades partly absorbed but not sufficiently to occlude lumen. Clamp left in place. Third operation, June 15. Primary union. Clamp in fibrous capsule. Catgut absorbed excepting one layer which was enough to prevent complete occlusion of artery. Feeble pulsation distal to clamp. Clamp left in place.

EXPERIMENT 25.—Dog 26. Operation, May 5, 1911. Clamp Model 2, with No. 1 plain catgut on both blades applied to left common carotid. Second operation, June 2. Same description of second operation applies here as in Experiment 24. Third operation, June 15. Primary union. Clamp in fibrous capsule, all of the catgut absorbed and blades as close together as set screw would permit. Feeble pulsation distal to clamp. Section removed and examined. The portion of artery in the grasp of the clamp greatly thinned from pressure atrophy but showing no evidence of obliteration. In this case the set-screw did not permit blades to come together, and pressure atrophy so thinned the vessel wall that the circulation was permitted to go on through the clamp.

EXPERIMENT 26.—Dog 27. Brown male. Weight 36 pounds. Operation, May 6, 1911. Clamp Model 2 with No. 0 iodin catgut on one blade applied to right common carotid. Second operation, June 3. Primary union of wound. Very feeble pulsation distal to compression. Clamp in fibrous capsule (*f*, Fig. 24). Catgut partly absorbed but not sufficiently to allow blades to come together. Section removed and examined (Fig. 24). Portion of artery in grasp of clamp was greatly thinned (*c*) and showed evidence of obliterative endarteritis. There is a small clot (*b* and *e*) on each side of the clamp.

EXPERIMENT 27.—Dog 27. Operation, May 6, 1911. Clamp Model 2, with No. 0 iodin catgut on one blade applied to left common carotid. Second operation, June 3. Primary union of wound. Clamp in fibrous capsule (*e*, Fig. 25). Catgut partially absorbed but blades not together. Section of artery removed and examined (Fig. 25). Portion of artery in grasp of clamp (*f*) greatly thinned and narrowed and an obliterative endarteritis in progress. A small clot (*c* and *g*) present on each side of clamp.

EXPERIMENT 28.—Dog 28. Yellow male, weight 42 pounds. Operation, May 8, 1911. Clamp Model 2, with plain No. 1 catgut on one blade applied to right femoral artery. Second operation, June 8. There was a small sinus in scar which led down to clamp. Clamp was free from artery, catgut all absorbed and blades together. Artery completely divided and stumps separated one inch. Both stumps pulsated. Proximal and distal segments removed and examined (Fig. 26). Each segment tapered to a point (*c*) beyond which was dense fibrous tissue (*d*). No clot in either segment.

EXPERIMENT 29.—Dog 28. Operation, May 8. Clamp Model 2 with No. 1 plain catgut on one blade applied to left femoral artery. Second operation, June 8. Primary union of wound. Clamp was free from artery. Catgut entirely absorbed and blades together. The artery was completely divided and stumps separated 1 inch. Both stumps pulsated. Proximal and distal segments removed and examined (Fig. 27). Each segment tapered to a point (*c*) beyond which was fibrous tissue (*f*). Proximal segment contained a small clot (*d*) in the occluded end.

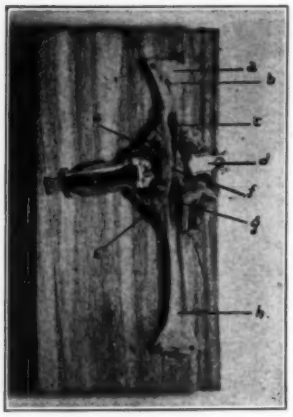


Fig. 25.—Dog 27; left common carotid. Exp. 27; a, above occlusion; b, collateral; c, clot; d, clamp in position; e, capsule around clamp; f, portion of artery in clamp; g, clot; h, below occlusion.

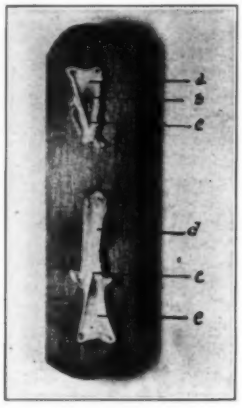


Fig. 26.—Dog 28; right femoral. Exp. 28; a, above occlusion; b, collateral; c, occluded ends of artery; d, fibrous tissue; e, below occlusion.

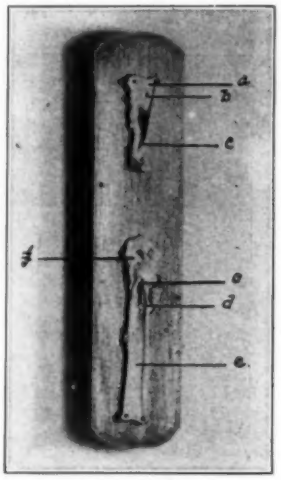


Fig. 27.—Dog 28; left femoral. Exp. 29; a, above occlusion; b, collateral; c, occluded ends of artery; d, small clot; e, below occlusion; f, fibrous tissue.

EXPERIMENT 30.—Dog 29. Small black female, weight 24 pounds. Operation, May 9, 1911. Clamp Model 2 with plain No. 1 catgut on both blades applied to abdominal aorta. Dog died May 15. For two days before death there was evidence of paraplegia. Post-mortem showed primary union of wound. Profuse hemorrhage in peritoneum and retroperitoneal space. Clamp in position. Catgut had begun to absorb. Section of aorta removed and examined. In anterior wall of artery was a small perforation which had evidently been caused by the pressure of the edge of the clamp. A small intravascular clot covered the perforation.

EXPERIMENT 31.—Dog 30. Black male. Weight 38 pounds. Operation, May 10, 1911. Clamp Model 2 with plain No. 1 catgut on one blade applied to right common carotid. Second operation, June 7. Primary union of wound. Clamp in fibrous capsule (*e*, Fig. 28), catgut entirely absorbed and blades together. No pulsation distal to clamp. Section of artery removed and examined (Fig. 28). Artery was perfectly occluded, each segment tapering to a point (*c*). Ends joined

TABLE SHOWING RESULTS OF EXPERIMENTS

Exp. No.	Artery Clamped.	Type of Clamp.	Absorbable Material Used.	Time.	Degree of Occlusion Found at	Absorption of Catgut or Decalcified Bone.	Healing of Wound.	Symptoms After Application of Clamp.
1	Left common carotid...	Model 1.....	Plain catgut.....	29 days.....	Second Operation.	Completely absorbed..	Primary union.....	None.
2	Right common carotid..	Model 1.....	Plain catgut.....	29 days.....	Complete	Completely absorbed..	Primary union.....	None.
3	Left common carotid...	Model 1.....	Plain catgut.....	34 days.....	Complete	Completely absorbed..	Primary union.....	None.
4	Abdominal aorta.....	Model 1.....	Plain catgut.....	2 days.....	Complete	.....	Suppuration	General peritonitis.
5	Abdominal aorta.....	Model 1.....	Decalcified bone.....	11 days.....	No change. Death...	.....	Suppuration	Paraplegia for 3 days before death.
6	Abdominal aorta.....	Model 1.....	Decalcified bone.....	45 days.....	Artery eroded. Hemorrhage. Death.	Completely absorbed..	Primary union.....	None.
7	Abdominal aorta.....	Model 3.....	Decalcified bone.....	10 days.....	Completely occluded...	.....	Suppuration	No paraplegia.
8	Right common carotid..	Model 4.....	Decalcified bone.....	24 days.....	No change. Death from pyonephrosis.	Almost complete.....	Primary union	None.
9	Left common carotid...	Model 1.....	Decalcified bone.....	24 days.....	Partial occlusion.....	Completely absorbed..	Primary union.....	None.
10	Right common carotid..	Model 1.....	Plain catgut.....	28 days.....	Completely occluded... Completely occluded...	Completely absorbed..	Small superficial sinus not communicating with clamp.	None.
11	Left common carotid...	Model 1.....	Plain catgut.....	28 days.....	Completely occluded...	Completely absorbed..	Same as Exp. 10. Primary union of deep tissues.	None.
12	Right common carotid..	Model 2.....	Iodin catgut, No. 0...	28 days.....	Completely occluded...	Completely absorbed..	Primary union.....	None.
13	Left common carotid...	Model 1.....	Iodin catgut, No. 1...	22 days.....	Completely occluded...	Partially absorbed....	Primary union.....	None.
14	Right common carotid..	Model 2.....	Iodin catgut, No. 0...	47 days.....	Not occluded.....	Not absorbed.....	Primary union.....	None.
15	Left common carotid...	Model 2.....	Iodin catgut, No. 0...	33 days.....	Completely occluded...	Partially absorbed....	Primary union.....	None.
16	Right common carotid..	Model 2.....	Iodin catgut, No. 0...	51 days.....	Partly occluded.....	Partly absorbed.....	Primary union.....	None.
17	Left common carotid...	Model 2.....	Iodin catgut, No. 0...	51 days.....	Partly occluded.....	Partly absorbed.....	Primary union.....	None.
18	Right common carotid..	Model 2.....	Iodin catgut, No. 0...	21 days.....	Completely occluded...	All catgut on one blade absorbed and most of it on the other.	Primary union.....	None.
19	Left common carotid...	Model 2.....	Iodin catgut.....	21 days.....	Completely occluded...	About one-half of gut absorbed from both blades.	Primary union.....	None.
20	Right common carotid..	Model 2.....	Iodin catgut, No. 0...	32 days.....	Completely occluded...	Most of catgut absorbed from both blades.	Primary union.....	None.
21	Left common carotid...	Model 2.....	Iodin catgut, No. 0...	32 days.....	Completely occluded...	All from one blade absorbed and most of it from other.	Primary union.....	None.
22	Right common carotid..	Model 2.....	Iodin catgut, No. 0...	28 days.....	Completely occluded...	Completely absorbed..	Sinus from skin to clamp on right c. carotid.	None.
23	Left common carotid...	Model 2.....	Iodin catgut, No. 0...	28 days.....	Completely occluded..	Completely absorbed..	Primary union.....	None.
24	Right common carotid..	Model 2.....	Iodin catgut, No. 0...	41 days.....	Partly occluded.....	Partly absorbed.....	Primary union.....	None.
25	Left common carotid...	Model 2.....	Plain catgut, No. 1...	41 days.....	Partly occluded.....	Completely absorbed..	Primary union.....	None.
26	Right common carotid..	Model 2.....	Iodin catgut, No. 0...	28 days.....	Partial occlusion. Feeble pulsation distal to clamp.	Partial absorption of catgut from both blades.	Primary union.....	None.
27	Left common carotid...	Model 2.....	Iodin catgut, No. 0...	28 days.....	Completely occluded...	Partial absorption from both blades.	Primary union.....	None.
28	Right femoral.....	Model 2.....	Plain catgut, No. 1...	31 days.....	Completely occluded...	Completely absorbed..	Sinus leading to clamp.	None.
29	Left femoral.....	Model 2.....	Plain catgut.....	31 days.....	Completely occluded...	Completely absorbed..	Primary union.....	None.
30	Aorta	Model 2.....	Plain catgut, No. 1...	6 days.....	Artery perforated by edge of clamp. Hemorrhage. Death.	Absorption had just started.	Primary union.....	Paraplegia for 3 days before death.
31	Right common carotid..	Model 2.....	Plain catgut, No. 1...	28 days.....	Completely occluded...	Completely absorbed..	Primary union.....	None.
32	Left common carotid...	Model 2.....	Plain catgut, No. 1...	28 days.....	Completely occluded...	Completely absorbed..	Primary union.....	None.
33	Right common carotid..	Model 2.....	Plain catgut, No. 1...	28 days.....	Completely occluded...	Completely absorbed..	Primary union.....	None.
34	Left common carotid...	Model 2.....	Plain catgut.....	28 days.....	Partially occluded. Feeble pulsation distal to clamp.	Almost complete absorption. Small amount of gut between blades.	Primary union.....	None.

by fibrous tissue (*d*). Both segments of artery contained blood-clots (*b*).

EXPERIMENT 32.—Dog 30. Operation, May 10. Clamp Model 2 with No. 1 plain catgut on one blade applied to left common carotid. Second operation, June 7. Primary union of wound. Clamp in fibrous capsule (*f*, Fig. 29), catgut entirely absorbed and blades together. No pulsation distal to compression. Section of artery removed and examined (Fig. 29). Artery perfectly occluded, each end tapering to a point (*b*). Ends united by fibrous tissue (*c*). Each segment contained a small blood-clot (*d*).

EXPERIMENT 33.—Dog 31. Female shepherd. Weight 26 pounds. Operation, May 10. Clamp Model 2 with plain No. 1 catgut on one blade applied to right common carotid. Second operation, June 7. Primary union of wound. Clamp in fibrous capsule, catgut entirely absorbed and blades as close together as set-screw would permit. No pulsation distal to compression. Section of artery removed and examined (Fig. 30). Portion of artery (*d*) in grasp of clamp was perfectly occluded by approximation of its walls. An obliterative endarteritis was in progress as shown by union of the walls on one side (*b*). There was no intravascular clot. This case demonstrates the purpose for which the set-screw was intended; viz., the complete occlusion of the vessel without its division by the clamp.

EXPERIMENT 34.—Dog 31. Operation, May 10. Clamp Model 2 with plain No. 1 catgut on one blade applied to left common carotid. Second operation, June 7. Primary union of wound. Clamp in fibrous capsule. All of the catgut on the outer surface was absorbed and only one layer left between the set-screw and the opposite blade. This prevented complete occlusion of the vessel. There was feeble pulsation distal to the compression. Artery not removed but one blade of clamp rewound with plain catgut and left in place.

CONCLUSIONS

1. Gradual automatic occlusion of the larger arteries at one operation can be uniformly produced by the method herein described.

2. Model 2, clamp with plain sterile catgut on one or both blades gives the best results. The absorption of iodin catgut is slow and uncertain.

3. The clamp with its elastic bands and catgut is perfectly tolerated by the tissues. The clamp becomes surrounded by a capsule of dense fibrous tissue, produces no irritation and may remain in place indefinitely.

4. The collateral circulation has an opportunity to develop during the process of gradual occlusion of the artery.

5. The ideal result is complete occlusion and division of the artery with tapering of the occluded ends and little or no clot formation.

6. The danger of secondary hemorrhage is slight; first, because the occlusion is gradually produced, and second, on account of the capsule of dense fibrous tissue which forms around the clamp and unites the two occluded ends of the vessel.

The accompanying table shows the results of our experiments.

I desire to thank Dr. M. M. Patton for very valuable services rendered in the work, also Drs. Jennings, Greenwald, Hamblen and the staff of the Washington State Veterinary College, Spokane, for their assistance.

306 Paulsen Bldg.

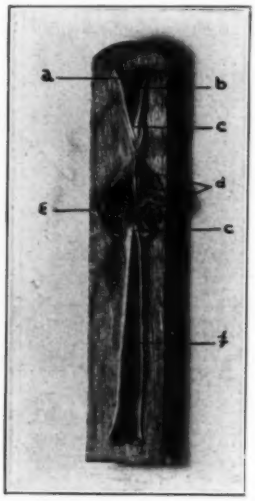


Fig. 28.—Dog 30; right common carotid. Exp. 31; a, above occlusion; b, clot; c, occluded ends of artery; d, fibrous tissue between ends; e, part of capsule around clamp; f, below occlusion.

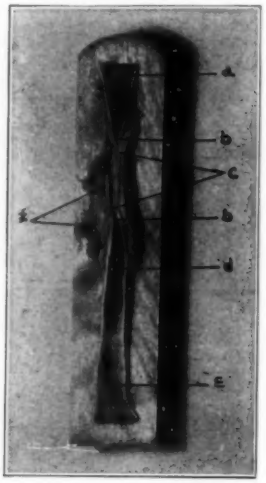


Fig. 29.—Dog 30; left common carotid. Exp. 32; a, above occlusion; b, occluded ends of artery; c, fibrous tissue between ends; d, clot; e, below occlusion; f, portion of fibrous capsule around clamp.

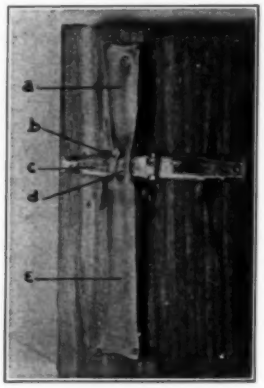


Fig. 30.—Dog 31; right common carotid. Exp. 33; a, above occlusion; b, portion of artery in clamp, where walls have united; c, clamp in position; d, portion of artery in clamp; e, below occlusion.

ABSTRACT OF DISCUSSION

DR. ROBERT C. COFFEY, Portland, Ore.: I was recently in Spokane and had Dr. Neff explain all his experiments to me, and I went over them carefully with him. It seems to me from his explanation and from what I have read and know of the previous devices for this same purpose, that Dr. Neff has put the climax on the subject of occlusion of arteries for the treatment of aneurysm. I believe he has solved the question of gradual occlusion which can be so regulated that a good collateral circulation may be established before complete occlusion takes place.

Baldness in Men and Women.—Degenerative changes in the blood-vessels and rigidity of the thorax, both characteristics of senility, are found much earlier in man than in woman. Man dies suddenly much oftener than woman. Men suffer from baldness more frequently than women. This is not confined to civilized races, but is found among savages and semi-civilized tribes, as in many of the North American Indians, even where it is the custom for the women, instead of the men to wear their hair short.—Stewart in *Medical Record*.

SENSIBILITY OF THE PERITONEUM AND ABDOMINAL VISCERA *

JAMES F. MITCHELL, M.D.
WASHINGTON, D. C.

Although earlier writers, both physiologists and surgeons, made passing mention of the fact that certain parts of the peritoneum and abdominal viscera are more sensitive than others, Lennander,[1] in 1901, first called attention forcibly to the fact that there is a distinct and constant contrast in the sensibility of the parietal and the visceral peritoneum. His first publication was elaborated by others until the time of his death. By an exhaustive and painstaking series of observations during operations, performed chiefly under local cocain anesthesia, he established the following facts: The parietal peritoneum is intensely sensitive to pain, but not to pressure, heat or cold. The abdominal viscera, on the other hand, possess no sense of pain. In other words, the visceral peritoneum and the abdominal organs, innervated only by the vagus or sympathetic nerves, are not sensitive to pain, and painful abdominal sensations are transmitted only by the phrenic, the lower six intercostals, and the lumbar and sacral nerves, which supply the parietal peritoneum. For the mesentery, his findings are not absolute, though he considered it also insensitive. By the natural application of these facts, Lennander offered hypotheses for the explanation of pain in various abdominal conditions, such as appendicitis, peritonitis or gastric ulcer. These ideas he expressed in a paper before the Section on Surgery of the American Medical Association in 1907, which may be summed up as follows: Pains do not originate within the abdominal organs themselves. Irritation of an abdominal organ first gives rise to pain when it has extended to sensitive tissue outside this organ. Pain then exists through an irritation of the parietal peritoneum. This may be mechanical, as in volvulus; chemical, as in absorption from an ulcer; or infectious, as by means of a lymphangitis in appendicitis, or the direct expulsion of contents from gall-bladder, stomach or intestine. Viscera involved in disease are quite as insensitive as sound ones, while the irritability of the parietal peritoneum is much increased by even a slight inflammation.

Lennander's work acted as a stimulus to investigators and there have appeared many exhaustive papers by surgeons, internists, physiologists and psychologists. Surgeons basing their opinions on findings during operations on human beings have, in the main, upheld Lennander's views. The general tendency is for animal experimenters to oppose them. Psychologists tend to take a middle path, and while admitting that for external stimuli the viscera may be insensitive, assert that nevertheless they possess a certain unlocalized sensibility to internal conditions.

The pain of ileus has been the subject of much discussion. Intestinal colic has been ascribed by Nothnagel[2] to anemia of the intestinal wall and to pressure on the nerves of the bowel wall in consequence of a tonic spasm of its muscular coat. Wilms[3] asserted that all those pains, which we are accustomed to term intestinal colic, are entirely due to the stretching of mesenteric attachments. Lennander found that he could stimulate a loop of human intestine until it became hard and blanched, and still there was no pain unless it tugged on the parietal peritoneum. This explains the fact that we often find dense adhesions between coils of intestine without any discomfort, and yet, when a movable piece of bowel is adherent to the fixed abdominal wall there is always pain. Lennander believed, however, that some forms of colic could not be explained by dragging alone, and these he attributed to a sliding of the parietal peritoneum on its very sensitive subserous tissue. A finger introduced into the abdomen and held firmly pressed against the parietal peritoneum of the anterior wall will not cause pain; but if the finger, while still in firm contact, is moved slightly from side to side, there will be intense pain. This I have often seen demonstrated in the use of a retractor dragged on by an inattentive assistant. We can thus see why a gradual, general distention may not be painful, while unequal distention of an obstructed intestine causes acute pain.

Innumerable tests made by surgeons at the operating table have shown that operative procedures may be painlessly carried out on practically any abdominal organ, provided the parietal peritoneum is avoided. Through gastric or intestinal fistulas the mucous membrane has been tested and has likewise been found to show no perception of touch, heat, cold or pain. Zimmermann,[4] in 1909, reported an extensive series of experiments on himself and on patients, in which the mucous membrane of the stomach and of the rectum was examined without the employment of any anesthetic. Through a stomach-tube or a rectal speculum the mucous membrane was irritated by means of pinching forceps, electrodes and the cautery. In the rectum, above 6 cm. from the sphincter, there was no response to touch, temperature, or electric stimulation; but great differences in pressure were felt. In the stomach likewise, he got no response, and here also there was only a sensation of fulness on great pressure. The esophagus he found sensitive to pressure and temperature, thus accounting for the sensation of warmth on taking hot or alcoholic drinks. This is in accord with the conclusions reached by Hertz, Cook and Schlesinger.[5] Schwenkenbecher,[6] in 1908, described an observation in which he took large doses of menthol, which produces in the mouth a feeling of intense cold. He noted that after the menthol passed the level of the larynx this feeling of cold was not experienced in any part of the intestinal canal until the sphincter ani was reached. He concluded from this experiment that the whole intestinal canal, except its upper and lower ends, is insensitive. Neumann,[7] on the other hand, found the stomach in women very sensitive to differences in temperature. How then can we account for the pain of gastric ulcer? It is well known that gastric ulcers can exist without pain, and their presence first be suspected through perforation or hemorrhage. Lennander asserted that a gastric ulcer remains painless so long as it is not accompanied by a lymphangitis; that the pains of hyperacidity are also due to absorption, by which irritating toxic or chemical substances are carried to the sensitive tissue of the abdominal wall. Mueller,[8] while admitting

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Lennander, K. G.: Centralbl. f. Chir., 1901, No. 8; Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1902, x, 38; 1906, xv, 465; xvi, 19; xvi, 24; see also Tr. Sect. on Surg. A. M. A., 1907, p. 211.
2. Nothnagel: Arch. f. Verdauungskr., 1905, xi, 117.
3. Wilms: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1906, xvi, 609.
4. Zimmermann: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1906, xx, 445.
5. Hertz, Cook and Schlesinger: Jour. Physiol., 1908, xxxvii, 481.
6. Schwenkenbecher: München. med. Wchnschr., 1908, No. 28, 1495.
7. Neumann: Wien. klin. Wchnschr., 1906, No. 30, p. 923.
8. Mueller: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1908, xviii, 600.

that the stomach shows no reaction to touch, heat or pain, as far as external stimulation is concerned, nevertheless maintains that it does react to internal irritations. . . . He believes that the abdominal organs do possess sensation for necessary protection; as from chemical irritation by increased acidity in the stomach, or mechanical irritation by fulness or distention. This sensibility he attributes to the sympathetic nerves, which, though ordinarily not transmitting pain impulses, may do so under abnormal or diseased conditions. He attributes the pain of gastric ulcer, as well as the distress of hyperacidity without ulcer, directly to the action of the increased hydrochloric acid content on the nerves of the stomach wall; and explains the painlessness of latent ulcers by the probable absence of hyperacidity. Mueller's statement was almost immediately answered by Schmidt,[9] who put into his own stomach as much as 30 c.c. of a 2 per cent. solution of hydrochloric acid with absolutely no unpleasant sensations therefrom. The question thus seems far from settled.

The pelvic organs of women have been frequently tested by surgeons during operations under local anesthesia. Their findings have been mostly in accord with those of Lennander. Sampson,[10] Broese[11] and others are among those who have made observations in this field, Broese stating that the diagnosis of ovarian neuralgia should never be made. Mueller and Godscheider claim that pain impulses may be transmitted from these organs by the sympathetic nerve. Meumann,[12] from the psychologic viewpoint, reaches much the same conclusion as Mueller. He believes that we possess internal sensation, but that it is not accurately localized. The uncertainty of these sensations is nothing but their indefinite localization, which depends on the fact that we cannot see their point of origin.

In 1906 appeared the first absolute contradiction of Lennander's ideas. Kast and Meltzer,[13] then and in later publications, reported the results of their animal experiments, chiefly on dogs. Their principal method of examination was to open the abdomen under ether narcosis, and close the wound by means of temporary sutures, the animal then being allowed to regain consciousness thoroughly, when one or more of the sutures was cut, and tests made through a very small opening. Mechanical, thermic and electric irritations were employed and any possible mesenteric tug was carefully avoided. They concluded that the abdominal organs of dogs, examined through a small opening, are undoubtedly sensitive; that this sensibility rapidly decreases on exposure or withdrawal of the viscera, but increases again after exposure long enough to produce inflammation. In cats and rabbits the sensibility is the same, but even more fleeting, and weak animals show less than strong ones. They see no reason why their findings should not apply as well to human beings. In offering an explanation for the conclusions reached by Lennander and other surgeons, Kast and Meltzer suggested that: First, the examinations were made through a large opening after exposure to the air or withdrawal of the viscera, and second, that they were all made during operations under local anesthesia. They found that a small dose of cocain, injected subcutaneously or intramuscularly, exerts almost immediately a quieting effect on animals and produces a general analgesia, thereby causing the sensibility of the parietal, as well as the visceral peritoneum and of the viscera themselves, to disappear. Their experiments were repeated by Mueller,[8] who obtained exactly opposite results. Ritter,[14] on the other hand, verified the conclusions of Kast and Meltzer; while Hotz,[15] experimenting on dogs under morphin narcosis, reports that manipulations of even strangulated or peritonitic intestines do not cause any expression of pain, and manipulation of the mesentery causes pain only when a tug makes traction on its root. In 1907, before this section, I[16] reported two cases in which I had opened the abdomen in men without the use of any anesthetic, and found that there was the same contrast between parietal and visceral peritoneum as when cocain was used. Haim[17] had a similar experience after opening the abdomen under general anesthesia and allowing the patient to regain consciousness. These observations were given little weight by Kast and Meltzer in their paper of 1909, because they were too few in number and not made on perfectly normal individuals. Ritter's views as to the general effect of cocain have changed with his different papers. At first (1908) he agreed with Kast and Meltzer; then (1909) he stated that cocain is purely local in its action, and later, he reported some interesting animal experiments in which he found that by injecting 5 c.c. of a 1 per cent. solution of cocain into the crural vein of a dog, all painful sensations were wanting in from three to five minutes. Vessels or nerves could be painlessly tied, or the skin burned with the cautery. This general anesthesia lasted half an hour or longer, when the animals gradually became normal.

An interesting communication has appeared this year by Harrison.[18] Into a superficial vein on the back of his hand, he injected slowly, during a period of thirty minutes, 5 grains of cocain in a 2 per cent. solution. Dizziness and palpitation made it seem wise to stop with this amount. Tests were at once made and results corresponded in an incomplete way with those reported by Ritter on animals. Cerebration was normal, except for inability to keep the mind on one subject. Motor power was unimpaired. There was marked analgesia everywhere. A small incision was made on the anterior part of the leg. It could be felt and caused a mere trifle of pain. Two or three small nerves in the fat were cut, each causing a slight twinge of pain. He concludes that the analgesia was probably sufficient for the performance of operative procedures without great pain, but that the relatively enormous dose of cocain necessary for even imperfect results makes it impossible for human surgery. It cannot be conceived then that the small amount of cocain used in an ordinary laparotomy could have any influence on peritoneal sensibility.

Ritter (1909) assails Lennander's findings. He bases his opinion on animal experimentation under morphin narcosis, agrees in general with Kast and Meltzer, and believes that the sympathetic nerves transmit sensory impulses. An entirely new principle is introduced in his experiments, associating visceral sensation directly with the blood supply. The ligation of blood-vessels, he says, is the only means of testing which eliminates all possibility of error. He finds this painful in every instance. Mesenteric tug he eliminates by means of

9. Schmidt: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1909, xix, 278.
10. Sampson: Ann. Surg., 1905, xli, 216.
11. Broese: Zentralbl. f. Gynäk., 1910, xxxiv, 1523.
12. Meumann: Arch. f. d. ges. Psychol., 1907, ix, 26.
13. Kast and Meltzer: Med. Rec., 1906, lxx, 1117; Mitt. a. d Grenzgeb. d. Med. u. Chir., 1909, xix, 586.
14. Ritter: Centralbl. f. Chir., 1908, No. 20; Arch. f. klin. Chir., 1909, xc, 389; Berl. klin. Wchnschr., 1909, xlvi, 1701.
15. Hotz: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1909, xx, 257.
16. Mitchell: The Journal A. M. A., 1907, xlix, 198.
17. Haim: Centralbl. f. Chir., 1908, No. 11.
18. Harrison: Boston Med. and Surg. Jour., 1911, clxiv, 151.

double ligation, the proximal ligature always causing pain, but the distal ligature only when it is applied first. All parts of the abdomen are thus sensitive, non-vascular parts less so than those rich in blood-vessels. The vessels themselves are most sensitive. Cocain acts only as a local anesthetic in the abdomen, and when applied about mesenteric vessels renders anesthetic the viscera supplied by them. Ritter believes the negative findings reported by surgeons to be due, not to cocain, but to the injury which the laparotomy does to the finer sensible nerve fibers in the abdominal cavity. This injury is important in the production of shock. He thinks it therefore wise when working in the abdomen under local anesthesia, to cocainize every vessel of any size before ligating it.

In a paper published in 1910, Nystroem,[19] a former assistant of Lennander, again champions his theories, and discusses in detail opposing contributions. He questions the value of animal experimentation, and calls attention to the opposite results obtained by different investigators in the same experiment, as well as the varying results with animals of different species. He repeated the test of Kast and Meltzer on animals, and was able to get no evidence of pain unless the mesentery was dragged on. He then made the same observation on a man during an operation for hernia. Under light ether narcosis the peritoneum was opened by a small incision. A loop of intestine was found presenting at the opening. The peritoneum was temporarily closed, and the patient allowed to regain consciousness. The parietal peritoneum was then found very sensitive, but the man was not aware of any irritation of the intestine unless the mesentery was pulled on. Nystroem concludes that the contradiction of Lennander's work is not to be unhesitatingly accepted, although he admits that there are many things which cannot yet be accurately explained. He suggests that further investigation of Ritter's idea of the relation between sensibility and blood-supply in the human abdomen is most important. Since reading Ritter's paper I have not had an opportunity of testing this except for the omentum, but I recall many cases in which large portions of vascular omentum have been painlessly excised, or sections of gall-bladder or liver removed for examination without complaint.

Daily experiences at the operating table, and in the after-care of patients whose abdomens have been drained, impress on us the greater sensitiveness of the parietal peritoneum. This is apparent even under ether narcosis. A patient may lie perfectly quiet during the manipulations of a gastroenterostomy, but will show evidence of disturbance when gauze pads which have been in contact with the abdominal wall are withdrawn, or when the viscera are replaced. In the production of shock, too, the greater influence of manipulation of the parietal peritoneum or mesenteric attachments is noticeable. This I have observed, especially in operations about the bile passages. Exposing, opening and draining a gall-bladder causes little disturbance in the patient's condition, but as soon as there is any extensive interference about the foramen of Winslow there is immediate evidence of shock. This region has been shown to be especially rich in spinal nerves, and I have found it most difficult to explore under local anesthesia. Likewise, a woman on whom I was doing a splenectomy for Banti's disease was in excellent condition until a ligature was tightened about the pedicle of the spleen, when she almost immediately passed into profound shock. If Ritter's view of blood-vessel-sensation association holds true, this might here be offered as an explanation. Mummery and Symes[20] have shown that manipulations of the parietal peritoneum and mesenteries in fully anesthetized animals produce shock much more rapidly than the same disturbance of the viscera. With local anesthesia it is very evident that only those procedures are painful which involve the parietal peritoneum or mesenteries.

A drain which lies against the abdominal wall is always more painful in its removal than one which only touches the viscera. We thus learned long ago, in the days of large gauze drains, to protect the peritoneal edges of our wound by tucking in rubber tissue. We can recall the pain resulting from the old method of suturing the gall-bladder to the peritoneum, and the consequent abandonment of this procedure. All these observations, made after opening the abdomen, are subject to the criticism that sensation may have been interfered with by the laparotomy itself.

Kast and Meltzer, in drawing their conclusions, end by stating that "surgical experiences on men offer no proof that the viscera of normal man in the normal closed body can feel no pain." While this is naturally a hard condition to answer, it has seemed to me that much might be learned by the careful analysis of all abdominal pains in patients about to be subjected to laparotomy. It has, therefore, been my custom for the past few years to write down the findings before operation, and make also a written prediction as to what was to be expected on opening the abdomen. A comparison of these predictions with the operative findings has given interesting results in support of the marked contrast between visceral and parietal peritoneal involvement. Many referred pains may be explained by the relation of the involved organ to the parietal peritoneum. Thus the first pain of an acute appendicular attack is most often located in the epigastrium. Time and again I have found with the abdomen open under local anesthesia that this pain could be accurately reproduced by traction on the mesentery of the appendix. The pain is, under these circumstances, accompanied by nausea, just as is so often seen in irritating the neck of a hernia sac. While doing a cocain appendectomy on a physician, Dr. S., I obtained his consent to some tests, the nature of which he did not know. He was anxious to watch the operation and see his appendix in place, and so was allowed to have his head raised for this purpose. The appendix presented readily at the opening in his unusually thin abdominal wall. It was clamped across, and caused no inconvenience. Then, by making traction on the mesentery, I could at will cause him to sink back with marked pallor, nausea, and complaint of violent pain in the epigastrium, which he described as "my old friend." These phenomena disappeared when the mesentery was released, and he was able to watch the completion of the operation. In a case of gall-bladder fistula with total occlusion of the cystic duct, as shown by a later operation, I was able, by injecting into the gall-bladder hydrogen peroxid and placing a finger over the fistula, to cause the typical pain of gall-stone colic. The man complained of agonizing pain about the right shoulder blade, which immediately disappeared when the finger was removed from the opening. I believe this pain to have been caused by traction of the distended gall-badder on the posterior peritoneum, and

19. Nystroem: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1910, xxi, 125.

20. Mummery and Symes: Brit. Med. Jour., 1908, ii, 700.

not by the mere distention itself; for a probe introduced into the gall-bladder and pushed with some force against its walls did not cause discomfort. I have seen the referred pain of ovarian disease, that is, down the inner aspect of the thigh, in an interesting case.

This boy (Mr. S., Case 1,034), aged 19, had been operated on eight years before for supposed appendicitis. The appendix was not found, and there was no pus, but apparently after considerable traumatism the wound was drained on acount of oozing from torn surfaces. He came to me complaining of frequent attacks of abdominal pain and nausea, which were not accompanied by fever. A careful analysis of his pains showed that they could be divided into three distinct groups: First, epigastric pain; second, diffuse pain in the region of his scar near the iliac crest, and third, pain down the inner side of his right thigh, simulating referred ovarian pain. It was concluded that there were three sets of adhesions between movable organs and parietal peritoneum; first, about the appendix; second, about the scar, and third, to the pelvic wall corresponding to the outer side of the broad ligament. At operation through a rectus incision there was found an appendix kinked on itself and bound by dense adhesions; adhesions between the cecum and parietal peritoneum about the scar, and a long tongue of omentum adherent to the pelvic wall about the iliac vessels. The appendix was removed, the omentum ligated and divided, and some of the adhesions about the scar separated, but raw surfaces left. The boy has remained well now for two years and has had no return of pain in the epigastrium or thigh, but occasionally some pain in the region of the old scar.

In acute conditions the findings are quite as constant. True muscle spasm is always due to inflammation of the anterior and lateral parietal peritoneum, and it is possible to make out accurately the extent of this involvement. While there may be some resistance to pressure on deep palpation in centrally located lesions, true protective muscle spasm comes only from inflamed parietal peritoneum. By the character and amount of pain and by the resistance to palpation, it is possible to tell before operation whether the lesion will be found deeply situated, as between omentum and intestinal coils, or directly against the parietes. The two following cases, operated on the same day, will serve as illustrations.

Mrs. Y., Case No. 1,086, gave a history of slight pain, referred to the umbilicus, followed by nausea and vomiting, and later by temperature. The pain was at no time very severe and had entirely disappeared on the third day of her illness. Examination showed a mass in the right iliac fossa. This was only slightly sensitive on deep pressure. There was no rigidity of the abdominal wall and no suggestion of muscle spasm. She was running a high temperature and it was predicted that the condition was an appendix abscess, well protected and not involving the parietal peritoneum. At operation there were found several ounces of foul pus, entirely walled in between intestinal coils and covered over by omentum. There were nowhere any adhesions to the parietal peritoneum. The tip of a long appendix, gangrenous and perforated, was lying in the abscess cavity. The base of the appendix was outside and entirely uninvolved.

Mr. F. (Case 1,084) was brought into the hospital with a history of forty-eight hours' illness, starting with violent pain about his umbilicus and in the right side, accompanied by nausea, vomiting and high temperature. His physician stated that the pain was so severe that it was necessary to administer chloroform before bringing him to the hospital. Examination showed respiratory movements on the right side limited and acute tenderness, rigidity and muscle spasm throughout the whole right flank, extending nearly to the costal margin. In this instance it could be definitely stated that the appendix was lying in contact with the parietal peritoneum and that there was involvement of the parietal peritoneum of the whole right flank. At operation, omentum, cecum and ascending colon were found adherent to the parietal peritoneum, limiting an abscess lying directly against the lateral abdominal wall. A gangrenous and perforated appendix was found, running up anterior to the colon, its tip adherent to the edge of the liver, thus lying in its whole length directly against parietal peritoneum.

Mr. S. (Case 977) was seen in an acute illness of several days' duration, which had been diagnosed by the attending physician as cholecystitis. There was no jaundice; but his pain, which had started in the epigastrium, was later most intense high up in the right flank and referred to the right shoulder blade. At operation there was found an abscess between the ascending colon and parietal peritoneum, containing a perforated appendix whose tip was adherent to the gall-bladder.

Another interesting patient came into the hospital with strangulation of a right inguinal hernia, accompanied by a temperature of 103 F. The hernia was reduced by an intern. Two days later the patient still had temperature and high leukocytosis, although his pain had entirely disappeared, and there was no tenderness or rigidity on pressure. Operation was done for the cure of his hernia. Through the internal ring the appendix was palpated and there was found a mass about its tip entirely encircled by a tongue of omentum. The appendix and omental mass were delivered through the ring and removed without separating the adhesions. The specimen showed a small abscess about the perforated appendix tip, which, however, had given no symptoms of pain, because entirely protected from parietal peritoneum by the surrounding omentum.

Our records show numerous similar cases, which, to me certainly, offer an evidence of a definite contrast in the sensibility of the parietal and visceral peritoneum in the unopened abdomen in man. Without denying the usefulness of animal experimentation in this particular field, we must insist that its results cannot outweigh the mass of surgical evidence. We agree with Nystroem that, while there are some weak points in Lennander's hypotheses, they appear to give a more rational explanation of the phenomena of abdominal pain than does the theory depending on an imaginary pain-carrying power of the sympathetic nerves.

1344 Nineteenth Street.

ABSTRACT OF DISCUSSION

DR. W. LEMOYNE WILLS, Los Angeles: Through the courtesy of Dr. Mitchell I have read his paper and have found that he has quoted the experimentation and literature of the last ten years, much of which I could not have obtained if I had wanted to; and it seems to me from the reading of the paper that it is the "Lennander theory" against the field, and most of us are willing to accept Lennander, and we must accept his theory until it is contradicted by equally good authority and observations. The German theorists and experimentalists have not gone so far as Dr. Mitchell has in his endeavor to make the experimentation and clinical findings of practical use. He has covered the ground so thoroughly that it is unnecessary to say more than that it is an instance of American ingenuity in turning the theories and experiments of foreign investigators to account in the way of securing the most practical results. If, as Dr. Mitchell has tried to show, he can make the diagnosis by pain more practical and useful, he will do us a great service. The average doctor and surgeon and patient care little about the hair-splitting distinctions as to whether it is this nerve or that nerve, or this traction or that traction, that produces the pain. What they want is practical deductions from these experiments, which will enable the physician and surgeon to make a better diagnosis, and thereby operate more successfully and get better results.

Balsam of Peru or Salvador.—The "balsam of Peru," so much used in medicine and surgery, comes from a tropical tree found in the republic of Salvador, which exports 130,000 pounds of the product yearly, half of which goes to Germany, nearly as much to the United States, with the small remainder to France.—*Daily Consular and Trade Reports.*

THE SANITARY RECORD OF THE MANEUVER DIVISION *

J. R. KEAN, M.D.
Lieutenant-Colonel, Medical Corps, U. S. Army
WASHINGTON, D. C.

Since July 10 the most of the organizations composing the Maneuver Division of regular troops at San Antonio, Texas, have been returned to their stations.[1] It is, therefore, an appropriate time to review the health conditions and sanitary administration of this camp, which has established a record that is unique in our Army for the smallness of its sick-list, the excellence of its sanitary arrangements and the completeness in organization of its medical department. The division consisted of eight regiments of infantry, two of cavalry, two of artillery, and the usual quotas of engineers, signal corps, and hospital corps. The latter had in addition to the regiment, four ambulance companies and four field hospitals. These were complete in equipment so far as the Medical Department could supply them, but one ambulance company and one field hospital were never supplied by the Quartermaster's Department with their mounts and draft animals. As regards personnel, although every garrison in the United States was stripped to an irreducible minimum to supply medical officers and hospital corps men for these organizations, there was a deficiency of twenty-one medical officers and 129 men below the authorized strength. This did not seriously impair the efficiency of the medical service of the division for field work, as it was itself much below its tactical strength, having only about 12,000 men instead of nearly 20,000, which it should have at war strength. These facts demonstrated clearly, however, the numerical inadequacy of the medical establishment of our Army, and if a second division had been called out, as at one time seemed probable, the situation in this respect would have been acute. The complete medical equipment and supplies for the division, including a base hospital of 500 beds and two evacuation hospitals of 324 beds each were shipped from the Field Medical Depots at Washington and St. Louis, accompanied by a detachment of the Hospital Corps to prevent loss or side-tracking, and arrived at San Antonio before the last troops were detrained.

SANITARY ARRANGEMENTS

A portable field laboratory was for the first time added to the medical equipment of this division for diagnostic and sanitary purposes. The base hospital was established at the neighboring post, Fort Sam Houston, for the reception of serious cases, but the evacuation hospitals which were intended for use on the line of communications, not being needed, were not manned or opened. The chief surgeon of the Division was Col. H. P. Birmingham, and the sanitary inspector Major Paul F. Straub, both of the Medical Corps, U. S. Army, and the latter a member of the General Staff.

The disposal of wastes is a matter of elementary importance in camp life and new and interesting developments were reached in this camp. In the vexed question of disposal of excreta, the old latrine pit, which had been thoroughly discredited by the better experience of the Spanish war was succeeded by the trough filled with milk of lime and emptied by an odorless excavator wagon and pump which was devised by the distinguished board which investigated the camp epidemics of typhoid fever in 1898 and of which Reed, Vaughan and Shakespeare were the members. This system broke down in rainy or freezing weather and in sandy soils and was gradually displaced by the theoretically perfect, but practically cumbrous incinerators, which did good service in fixed camps and with skilled handling, but were not mobile and were very costly. The mobilization of March 6 was so unexpected and so rapid that no time was given for the purchase and erection of these elaborate constructions and so a system was adopted which has been previously tried on a small scale. A narrow, deep trench, 18 to 24 inches wide, is dug and over it is placed a box seat, entirely fly-proof, with self-closing covers and a urinal at one end. This sink-box, as Harvard terms it in his excellent "Military Hygiene," can be knocked down for transportation, is movable, and is removed once a day, and the pit burned out with hay sprinkled with crude petroleum. The box was at the same time cleaned and then replaced. The contents of the pit were in this way sterilized so as to give no putrefactive odor after even three months of use. Besides the greater simplicity, mobility and quickness of installation of the sink-box as compared with incinerators, the Quartermaster's Department estimated that the cost of the sink-box system was $900 a month for the whole camp, whereas incinerators of an approved type would cost for material and labor $30,000 a month. The kitchen wastes, both solid and liquid, were also consumed by fire, in a kitchen crematory which consisted of a shallow pit a foot deep, 4½ feet long, and 2½ feet wide, filled to the level of the earth with broken stone and surrounded by a wall of clay or stones a foot high. A fire was kept burning on this and consumed all garbage thrown on it while the heated stones quickly evaporated the slops.

Horses in camp were tied side by side to a heavy rope called a picket-line and so their droppings were easily collected and with the straw bedding hauled away and burned. The picket-line areas were also sterilized once a week by burning them over with straw and crude petroleum, thus effectually disposing of the fly larvæ and of all odors. Ten gallons of oil were used for each burning of a picket line. These several precautions effectually kept down the number of flies and afforded no opportunity for their access to infectious material.

The sanitary police of the camp in other respects also was rigidly supervised by the medical officers, so that this crowded camp site, which had been used continuously for four months, when vacated presented nothing offensive to sight or smell.

The water-supply was from the water system of Fort Sam Houston and was artesian in origin and entirely above suspicion.

HEALTH OF THE TROOPS

The health of military commands is usually measured by the constantly non-effective rate which represents the average number constantly sick in each thousand men. This was for the Maneuver Division 22 per thousand up to the first of July, and its smallness can be appreciated when it is stated that this rate was 34 for all troops in the United States for the year 1910. In other words, the health of these soldiers in camp, sometimes living in deep mud and at other times in clouds of dust and under a semitropical sun, was better than in barracks surrounded by the comforts and sanitary appliances of post life.

The largest cause of morbidity was venereal diseases (4 per thousand), and next came measles and mumps (3 per thousand), the latter affecting almost exclusively the

* Published by authority of the Surgeon-General.

1. The maneuver division went out of existence on August 7 and the troops remaining comprise a brigade under the command of Brigadier-General Ralph W. Hoyt

newly arrived recruits. The actual number of admissions for the more important camp diseases were: typhoid fever, two; malaria, nine, all benign tertians; simple diarrhea, 119; dysentery, twenty-nine.

TYPHOID PROPHYLAXIS

Perhaps one-fourth of the troops arrived at San Antonio already immunized by voluntary antityphoid inoculations given them at their posts. It was concurrently determined by the Division Commander and the War Department that the time had arrived to make this procedure compulsory for troops taking the field, and it was so ordered and carried out as rapidly as the prophylactic culture could be supplied from the laboratory of the Army Medical School. The technic was simple. The site of puncture, usually the outer side of the left arm, was sponged off with alcohol and a small area sterilized with tincture of iodin, the injection made with a sterile syringe and the puncture sealed with collodion. The first dose is 0.5 c.c., the second and third being 1 c.c. each. An interval of ten days is allowed between doses, the entire procedure thus taking twenty days. The injection is made into the subcutaneous connective tissue and not into the muscles. There was practically no puncture infection, and the reaction was mild or absent in 90 per cent. of the cases treated. In no case was it followed by serious results. There were up to July 1, 8,097 men immunized.

1898

TABLE SHOWING FOR THE REGIMENTS OF THE SECOND DIVISION OF THE SEVENTH ARMY CORPS, ASSEMBLED AT JACKSONVILLE, FLA., THE MORTALITY AND MORBIDITY FROM TYPHOID FEVER

Regiments	Mean Strength	Cases of Typhoid Fever Certain	Cases of Typhoid Fever Certain and Probable	Deaths from Typhoid Fever	Deaths from All Diseases
Second Illinois	1,095	253	341	18	22
First North Carolina	1,164	147	227	16	20
Second New Jersey	1,153	185	318	29	32
First Wisconsin	1,232	209	311	46	48
Fiftieth Iowa	1,097	164	253	33	33
Ninth Illinois	1,288	153	248	18	28
Second Virginia	1,220	105	152	17	20
Fourth Virginia	1,274	135	231	21	28
Forty-Ninth Iowa	1,236	378	612	50	50
Total	10,759	1,729	2,693	248	281

1911

TABLE SHOWING FOR THE ORGANIZATIONS COMPOSING THE MANEUVER DIVISION AT SAN ANTONIO, TEXAS, THE MORBIDITY AND MORTALITY FROM TYPHOID FEVER, MARCH 10 TO JULY 10, 1911*

Organization	Mean Strength June	Cases of Typhoid Cer. and Prob.	Deaths from Typhoid Fever	Deaths from All Diseases
Eleventh infantry	924	..	..	..
Fifteenth infantry	989	..	..	2
Eighteenth infantry	1,022	..	..	..
Thirteenth infantry	929	..	..	..
Twenty-second infantry	1,033	..	..	..
Tenth infantry	1,016	..	..	1
Seventeenth infantry	954	..	..	..
Twenty-eighth infantry	951	..	..	..
Third field artillery	847	..	..	2
Fourth field artillery	741	..	..	1
Engineer battalion	536	..	..	1
Signal corps	197	..	..	..
Ninth cavalry	744	..	..	..
Eleventh cavalry	1,143	..	..	3
Sanitary troops	795	1†	..	1
Total	12,801	1	0	11

* In addition to the above a civilian teamster, not immunized, was admitted for typhoid fever in April.

† This patient, a private of the hospital corps, had not completed his immunization, having taken only two doses. The case was very mild and would perhaps have been overlooked but for the rule that blood cultures were made in all cases of fever of over forty-eight hours' duration. The Widal reaction has no diagnostic value in immunized persons, as all respond to it. Forty-nine cases of typhoid fever with nineteen deaths were reported as occurring in the City of San Antonio during this period.

The immense advance in camp sanitation and particularly the value of this protective measure can be estimated by comparing the typhoid incidence of this camp with that of the Second Division, Seventh Army Corps, which was organized at Jacksonville, Fla., about June 1, 1898, and remained there in camp until October; some of the regiments leaving in September. This division was not conspicuously unfortunate in its typhoid record for that time, and is selected because of the close similarity of its conditions of service to those of the Maneuver Division. The two divisions were encamped in nearly the same latitude and for about the same length of time, and each had a good camp site and an artesian water-supply of unimpeachable purity. While the period in camp of the Second Division, Seventh Army Corps was later in the year, the number of men involved is larger for the Maneuver Division. The accompanying table referring to the former is taken from the celebrated "Report on Typhoid Fever in U. S. Military Camps in the Spanish War," by Reed, Vaughan and Shakespeare, Vol. 1, page 609.

REPORT ON 140 RECENT CASES OF PSORIASIS IN PRIVATE PRACTICE UNDER A STRICTLY VEGETARIAN DIET *

L. DUNCAN BULKLEY, A.M., M.D.
Physician to the New York Skin and Cancer Hospital, Consulting Physician to the New York Hospital, etc.
NEW YORK

In spite of repeated communications[1] on the subject the medical profession still does not seem to realize the value of a strictly vegetarian diet in psoriasis; and yet I could refer to many intelligent patients in private practice who have said, "You may quote me as a striking instance of the unquestionable value of this element in treatment."

It occurred to me, therefore, to keep a list of patients in private practice whom I had observed and treated during the past two years, and who have been under a vegetarian diet, and, after studying their records, to present the results obtained; the total number of the cases is 140. Some of the patients have been under observation and more or less treatment for many years; the larger proportion of them were first seen during the past two years; but, as will be mentioned later, the older and the newer cases alike confirmed the value of a strictly vegetarian diet, often in a very striking manner. It should be stated that careful notes were recorded of all these cases, and full entries made at each and every visit; I may add that most of the cases to be analyzed were also watched by my office associate, Dr. Paul E. Bechet, who is equally impressed with myself in regard to the beneficial effect of the plan advocated.

Psoriasis is such an inveterate disease that many patients applying for treatment are often convinced by what they have heard from physicians and others that the disease is incurable, and it is often very difficult to get the patient to submit to the proper dietary treatment for a long enough period to secure perfect results. Moreover, it not infrequently happens that even while maintaining a strictly vegetarian diet, there will be an outbreak of the eruption, more or less severe, and the patient is naturally discouraged, and may drop the diet, not recognizing that there are other causes which may

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Tr. First Internat. Congress of Dermatol., Paris, 1889, p. 892; Tr. Med. Soc. New York, 1895, p. 151; Tr. Third Internat. Congress of Dermatol., London, 1896, p. 734; THE JOURNAL A. M. A., Nov. 17, 1906, p. 1630.

disturb the metabolism and induce the recurrence of the disease. This subject will be more fully considered later.

Whenever I have presented the subject some one has always opposed the vegetarian plan of treatment by referring to the constantly quoted report of a certain Dr. Passavant, who asserted that psoriasis could be cured by an exclusively meat diet. Although I have already exploded this fallacy on a former occasion,[2] I feel that I must briefly state the facts in order that this contention may be set at rest: for the text-books all refer only to this single report, published over forty years ago, and never confirmed by any one since, as far as I can find in literature, whereas many have more or less supported the value of a strictly vegetarian diet in psoriasis.

The facts are briefly these. In 1867 Gustav Passavant of Frankfort, Germany, in an open letter to Prof. F. Von Hebra,[3] reported that having suffered for twenty-five years from psoriasis he was soon free from it after entering on an almost absolute meat diet, including soup, pork, fats, cod-liver oil, milk and bacon, and practically no vegetables or bread; he advised also against wine, beer, coffee and tea, and spices. He cited one case of squamous eczema also relieved by this treatment.

There are a number of points in connection with this brief report which quite invalidate any importance which might be attached to it. Dr. Passavant does not mention if possibly he used any treatment, internal or external, in connection with the diet; then, he does not state if the improvement in his condition lasted any length of time, or if he had any return of the eruption, either under the diet or without it; he does not mention the season of the year, for we know that psoriasis will sometimes disappear spontaneously with the changing season; finally, on analyzing the diet mentioned, it is not really a meat diet, as he emphasizes pork, fats, cod-liver oil, milk and bacon, which contain very little nitrogen. However, he mentions one single other case, and that of eczema, which was benefited by his plan of treatment.

On the other hand, Professor Hebra,[4] to whom Dr. Passavant addressed his open letter, ridiculed the claim made, some years after its publication, and, as far as I can find, there has been no subsequent corroboration in literature of the correctness of the claim of Passavant that psoriasis can be cured by a meat diet. Surely if there were any truth in it, some proof would be forthcoming in the forty-four years which have elapsed since its publication. On the other hand there are abundant, though brief, allusions in literature as to the injurious effect of excessive meat-eating in psoriasis. My experience, dating back, some of it, for twenty-five years, shows conclusively that not only does a meat diet increase psoriasis, but that an absolutely vegetarian diet is of the very greatest benefit in this disease, and in certain cases is capable of alone causing the disappearance of a long-standing eruption, without the use of any internal or external medication whatever. It is sincerely to be hoped that the senseless reference to the Passavant incident will now disappear from our text-books and literature, as they lead only to confusion and misjudgment.

Psoriasis is undoubtedly one of the most rebellious of all affections appearing on the skin, discouraging alike to the physician and patient. While a certain few cases will yield admirably to well-directed treatment, and perhaps remain free for a varying length of time, the disease is pretty sure to return in a very large proportion of instances, under all the forms of treatment which have hitherto been recommended in the text-books and literature. Certain it is that local treatment alone, which is often very effective when properly carried out, can accomplish nothing in the way of a permanent cure.

Psoriasis is not so very common an eruption, as it forms, generally, about 3.5 per cent. of cases appearing in various localities. It is rarely found, however, in the warmer climates, and during a prolonged trip to the far East I could not learn of any cases at all among the natives in various countries who lived mainly on a vegetarian diet, principally rice.[5] The disease affects all ages, and the sexes about equally, as may be seen from Table 1, which represents separate patients, with no duplicates, as far as is known.

TABLE 1.—AGE AT TIME OF CONSULTATION

	Private Practice			Public Practice			
Age (years)	M.	F.	Total	M.	F.	Total	Grand Total
0-5	1	2	3	8	7	15	18
5-10	4	14	18	34	72	106	124
10-15	6	11	17	59	94	153	170
15-20	28	55	83	80	140	220	303
20-25	47	63	110	134	164	298	408
25-30	67	57	124	173	153	326	450
30-35	71	34	105	160	96	256	361
35-40	60	22	82	106	57	163	245
40-45	38	9	47	81	52	133	180
45-50	30	11	41	45	44	89	130
50-55	18	16	34	33	27	60	94
55-60	7	11	18	26	15	41	59
60-65	7	6	13	24	16	40	53
65-70	3	3	6	7	10	17	23
70-75	2	..	2	7	3	10	12
75-80	1	..	1	2	..	2	3
Age unknown	3	..	3	..	7	7	10
	393	314	707	979	957	1,936	2,643

The 707 cases in private practice occurred among 18,705 miscellaneous skin cases, giving a percentage of 3.7, and the 1,936 in public practice among 49,622 cases, making over 3.8 per cent. It will be seen that patients come at all ages for treatment, there being even three between 75 and 80 years of age, while by far the largest proportion were between 20 and 30 years of age, namely 858, or almost one-third of the whole.

The age at which the eruption is likely to develop first is seen in Table 2 taken from patients in private practice.

TABLE 2.—AGE AT FIRST APPEARANCE OF PSORIASIS

Private Practice

	Number		
Age (years)	Male	Female	Total
1/3	1	..	1
1	3	..	3
1-2	2	3	5
2-3	3	6	9
3-4	1	4	5
4-5	3	8	11
5-10	26	49	75
10-15	41	77	118
15-20	67	53	120
20-25	85	31	116
25-30	43	22	65
30-35	39	12	51
35-40	29	9	38
40-45	14	8	22
45-50	12	12	24
50-55	8	8	16
56	..	3	3
59	..	1	1
60	1	..	1
61	..	2	2
63	..	1	1
64	..	1	1
Age unknown	15	4	19
	393	314	707

From this table we see that the disease may develop very early in life, in one instance at 4 months of age,

2. The Journal A. M. A., Feb. 22, 1908, p. 582.
3. Passavant, G.: Arch. f. Heilk., 1867, p. 251.
4. Hebra: Lehrbuch für Hautkrankheiten, 1874, i, 352.
5. Bulkley: Notes on Certain Diseases of the Skin Observed in the Far East, Jour. Cut. Dis., January, 1910.

and that it is not so uncommon in childhood, there being 109 patients or over 15 per cent. in whom it appeared up to 10 years of age; but in the next decade there were 238 cases; it may also develop first quite late in life, as there were twenty-five patients over 50 years of age. The most common period for its first appearance was between 15 and 20 years of age.

As is well known, when once well developed, psoriasis tends to remain indefinitely, and Table 3 shows the duration of the disease before coming under observation, in the patients in private practice.

TABLE 3.—DURATION BEFORE COMING

PRIVATE PRACTICE

Age	Number		
	Male	Female	Total
Under 1 year	51	46	97
1 to 5 years	85	73	158
5 to 10 years	80	85	165
10 to 15 years	62	44	106
15 to 20 years	37	33	70
20 to 25 years	30	17	47
25 to 30 years	12	4	16
30 to 35 years	7	1	8
35 to 40 years	4	3	7
40 to 50 years	10	4	14
Unknown	15	4	19
	393	314	707

Here we see a record of its persistence, twenty, thirty or even fifty years, and undoubtedly these numbers would be much larger were it not that so many patients become utterly discouraged, and relatively few of the many existing cases seek further relief after it has persisted for many years, often in spite of varied treatment.

Table 4 illustrates this point in regard to the patients in private practice. There were 152 who were seen only once, many of them in consultation, but of those who were treated there were 338, or over 60 per cent., who were treated less than one year, which is certainly not long enough to effect a change of system necessary to secure freedom from psoriasis. In many of those who were long under observation the records show that they were often irregular and careless in treatment, and many of them were seen before the strict vegetarian diet was rigidly enforced.

TABLE 4.—DURATION OF OBSERVATION IN PRIVATE PRACTICE

Patients	Number		
	Male	Female	Total
Seen once	102	50	152
1 month or less	60	34	94
1 to 2 months	30	25	55
2 to 4 months	23	35	58
4 to 6 months	20	23	43
6 months to 1 year	47	41	88
1 to 2 years	34	33	67
2 to 3 years	20	17	37
3 to 4 years	9	9	18
4 to 5 years	10	2	12
5 to 10 years	18	22	40
10 to 15 years	10	15	25
15 to 20 years	4	5	9
20 to 25 years	4	2	6
25 to 30 years	2	1	3
	393	314	707

Vegetarian diet for health is no new proposition, and needs no defense or explanation; the literature regarding it is extensive, and its positive value has been frequently demonstrated. All are aware that repeatedly vegetarians have far outstripped meat-eaters in athletic contests, while the reverse is almost unknown. The mass of human kind have always subsisted largely or entirely on the products of the ground, and in animal life all work is done on food from the vegetable kingdom.

On the other hand, the consumption of much meat is of relatively modern date, with some exceptions, and is particularly common in cities, the mass of workers in rural districts subsisting chiefly on vegetarian products.

Nor need we dwell long on the injurious effects of a too highly nitrogenized diet on the human system, which has long been recognized and has had able exponents. All are familiar with the necessity of curtailing meat diet in many conditions of the system, and writers have repeatedly called attention to its influence in the production of cancer; the relative absence of cancer among the natives in rice-eating countries, which I also observed in the far East[5] is striking evidence in this direction.

The relation of meat-eating to psoriasis is also no new observation. Brief mention of it has occurred in literature for some time, and over twenty years ago,[6] at the First Congress of Dermatology and Syphilology, in Paris, in 1889, I stated that "excessive meat-eating will also increase the disease, which will frequently yield with much greater rapidity, under the same treatment as before, when the amount of meat taken is lessened, or when it is entirely cut off," as I had observed in private cases for some years. Since that time I have watched and studied the matter continuously, both in public and private practice, mainly the latter, and have reported favorably in regard to the same repeatedly, with increasing confidence; and this is especially true since I have been enforcing the diet most rigidly during the last two years, during which time I have kept the special record of these cases, as already referred to.

During this period I have observed 140 cases of psoriasis who were placed on a strictly vegetarian diet: there were sixty-eight males and seventy-two females, of all ages from 9 to 70 years. The patients have had the disease for varying lengths of time, though there were only ten who had been affected for less than one year; thirty-three had had it for from one to five years, thirty-six from five to ten years, and many for a great length of time, even up to forty years. I may here say, however, that I have seen quite as startling results in those who have been very long afflicted as in recent cases, provided there has been equal faithfulness to treatment.

In regard to the faithful carrying out of the dietetic treatment there have been, of course, varying degrees of fidelity in different patients, but it is interesting to note how willing those who have suffered from the disease for some time are to accede to the plan which offers them a prospect of freedom from their rebellious complaint; on the other hand, in some of the more chronic cases, the patients from their former experience have become so skeptical as to such hopes that it is often very hard to get them to persist faithfully in the diet; while those who have only begun to suffer from psoriasis find it difficult to believe that such a radical change in their mode of life is necessary.

Of the cases here analyzed, in twenty-one the patients were seen but once and must be excluded from consideration; twenty-five were seen but a month or less, and no ultimate conclusions can be drawn from them. Records show, however, that in some of them the almost immediate improvement in the character and appearance of the eruption indicated the benefit of the treatment, and quite probably some of them may have persisted in the diet and possibly may have become freed from the eruption.

As far as can be learned sixty-one patients or nearly one-half the entire number of those whose cases are analyzed, were wholly faithful to the vegetarian diet during the period while under observation, and twenty-four were recorded as fairly faithful.

6. Tr. First Internat. Cong. Dermatol. and Syph., Paris, 1889, p. 892.

In such a disease as psoriasis, and with private patients, who cannot always be controlled or seen as often or as long as desired, it is very difficult to make concise and correct statements in regard to the carrying out of any particular line of treatment, or the results therefrom. But Table 5 will give some idea of the length of time during which a vegetarian diet has been carried out, more or less strictly, by the patients whose cases are under consideration.

TABLE 5.—DURATION OF VEGETARIAN DIET

Patients	Number		
	Male	Female	Total
Seen once	18	12	30
1 month or less	13	13	26
1 to 2 months	5	5	10
2 to 4 months	6	6	12
4 to 6 months	..	5	5
6 months to 1 year	11	10	21
1 to 2 years	5	6	11
2 to 3 years	3	3	6
3 to 4 years	1	3	4
4 to 5 years	1	1	2
5 to 10 years	2	5	7
10 to 20 years	2	3	5
20 to 30 years	1	..	1
	68	72	140

It is actually true that quite a number of these patients have continued a strictly vegetarian diet for months and even years, and I have frequently been told that they would not return to a mixed diet under any consideration. In some instances they have relaxed more or less, with perhaps but little ill effect on the condition of the skin, when all other elements of treatment were rightly carried out. But time and again patients who have relapsed into free meat-eating have returned with a fresh outburst of eruption, or great aggravation of any that had remained, and they intelligently recognized the cause, and have willingly taken up the vegetarian diet again, because of the great benefit which they had previously experienced from it.

The question arises as to the length of time it is necessary to continue the vegetarian diet. I am accustomed to tell my patients that this may be indefinitely; for if a faulty nitrogenous metabolism and excretion is at the bottom of the eruption, as it seems to be, this may recur whenever the intake of proteids exceeds the power of the system to handle them.

In some instances a return to a moderate mixed diet has not seemed to increase the tendency to the eruption, but in very many cases it has been recorded that any indulgence in a great amount of nitrogenous diet has caused a return of the skin lesions. So that we must infer that with a certain small proportion of human beings the organs are not able properly to assimilate much proteid substance.

It may be asked if the improvement observed to occur on a vegetarian diet bears any relation to the seasons of the year, as it is well known that psoriasis will often disappear at certain seasons. It may be answered that this is not the case. In the cases here analyzed the patients have been treated and watched throughout the year, and the improvement occurs shortly, irrespective of the season.

It may also be questioned as to whether the improvement observed was not due to some medication, internal or external. In reply I may say that this has been tested in a number of patients, over half a dozen, and these mostly inveterate cases, some of whom were very skeptic, owing to long years of unsuccessful treatment elsewhere. Explaining the matter fully, these patients have had absolutely no other treatment, internal or external, and have watched with great interest as certain lesions have ceased to scale, then faded, and finally disappeared entirely, leaving only a stain, which ultimately ceased to exist. This has been verified time and again by my associate, Dr. Bechet.

It is true, however, as remarked before, that there will sometimes be a recrudescence of the eruption to a greater or less extent, even while the patient is supposed to be under a rigid vegetarian diet; but I have never seen an outbreak nearly so severe or so persistent as previous ones; the lesions will be small and much less pronounced, and will commonly yield quite readily to appropriate treatment, dietary and medicinal.

This recurrence of eruption may be accounted for in several ways, and does not at all weaken the argument for a vegetarian diet in psoriasis. First, it is always possible that the patient may not have always adhered to the restricted diet as absolutely as reported. Second, the details of an exactly proper vegetarian diet have not yet been all worked out, and it is quite possible that some articles in the vegetable kingdom may lead to the faulty metabolism which is at the bottom of psoriasis. Third, there may be other causes also at work, as yet unrecognized, which favor the eruption. Fourth, there may be such a wrong action of some of the internal organs that even a purely vegetarian diet does not secure a perfect blood condition. (It will be seen from what has preceded that I regard psoriasis as a constitutional and not a purely local affection, although I recognize that the lesions on the skin may be due, in part, to the action of some of the microscopic organisms which abound on the surface, which operate when the soil has become suitable. It would lead too far from our subject to discuss the matter further, and to present the indubitable proof of this thesis.)

We may now very briefly consider the physio-pathologic basis for a vegetarian diet in psoriasis, and some of the principles underlying its successful treatment.

Perverted metabolism, and hence disordered nutrition, is the basis of much disease, whether it be caused by an erroneous intake of nutritive substances or the faulty disposition of them by the various organs of the system.

If we knew as much about the fluid composition of the blood as we do about its cellular elements, and should analyze it frequently, we could undoubtedly determine more about the true pathogeny of disease. But in the urine we have a most wonderful indicator of the blood-state, and if its oft-changing conditions are minutely studied often enough, and intelligently interpreted, we can know much more of the processes of metabolism than can be learned in any other way. Formed as it is directly from the arterial blood, after this has been prepared by the various organs and finally aërated by the lungs, and is on its way to nourish the tissues, the kidney secretion is to be studied in another light than simply as an excretory product. By the different proportions of its many ingredients it represents to us to a certain degree the composition of the blood itself as the kidneys have found it, and the result of their efforts to purify it.[7]

Time fails to permit entering at all largely into the interesting subject of the condition of the urine continually found in patients with psoriasis; suffice it to say that the average of a very large number of carefully made, volumetric analyses showed deviations from the normal which were of the utmost importance, all looking towards an imperfect metabolism of nitrogenous elements. The average specific gravity was 1.026, 1.030 to 1.040 being not uncommon, and the acidity was invari-

7. Some Problems in Metabolism Occurring in Patients with Certain Diseases of the Skin, Jour. Cutan. Dis., April, 1911.

ably high, often three or more times the normal, uric acid and urates abounding, and the urea increased even to double the normal amount.

Acting on these indications we find psoriasis always benefited by alkaline diuretics, and a strict vegetarian diet, involving a restriction as to the intake of nitrogenous elements, shows alike in the urine, while it produces its beneficial effects on the skin. It is interesting to observe, however, that often for quite a period after entering on a vegetarian diet, the urine may still show evidence of excessive uric acid elimination, thus supporting the view which has sometimes been criticized, that there is at times a retention in the system of waste nitrogenous products which operate harmfully, and which the blood takes up much more readily, in proper combination, when relief is afforded by a non-nitrogenous diet. This is not the place to enter into a further consideration of the chemistry of the body, or to trace where the error of metabolism lies; but it certainly has to do with the functioning of many organs and parts of the system, and medical acumen and skill are required to discover and rectify the faulty actions involved.

Therefore, while a strictly vegetarian diet is strongly advocated in psoriasis, and while under certain conditions it is quite possible for the lesions to disappear under its influence alone, with no other treatment, internal or external, it is to be clearly understood that this is not the only element of treatment to be considered, although undoubtedly the most important one. To obtain the best results there is need of constant medical supervision in order to secure the best working of the economy in all directions, and proper internal and external medication can accomplish very much more in connection with an absolutely vegetarian diet than without it. It is, of course, impossible here to enter into any details regarding these matters.

A few words may be added in regard to the practical working out of the problem of vegetarian diet. When it is first explained that this diet means the absolute exclusion of all kinds of meat, poultry, fish, eggs, etc., and living only on the products of the ground, many patients hesitate and ask, "Well then, what can I eat?" So that it will often require some little patience and thought to aid them in securing a properly nourishing dietary; and it requires some watching to keep them strictly up to it. But with help they soon learn to manage successfully, and I have many who would not return to a mixed diet under any consideration. Many speak of their unusual well-being, and feel most grateful for the improvement in general health and vigor.

There are some articles from the vegetable kingdom, however, that have to be guarded against. Alcohol in any form, even the lightest beer, is prejudicial, and in some instances I have found better results when I excluded coffee, chocolate and cocoa, allowing only weak tea, and water in abundance. Butter is the only non-vegetarian substance which is allowed, unless it be possibly a little very fat bacon, occasionally. I do not allow milk to be used as a beverage, or on cereals, which should be eaten with butter and salt. Care must be taken against indulgence in sweets, and I commonly cut off pastry. Nuts, if well chewed, seem to act well, but much acid fruit seems sometimes to interfere with the treatment; vinegar on salad is harmless.

The question is asked about the ultimate results: "Is psoriasis curable with a perfectly carried out vegetarian diet, and proper other treatment?" This is a difficult question to answer very positively, because of the well-known character of the disease and the uncertainty of patients, as to their again consulting the same physician if there should be a relapse. But from my watching this treatment for more than twenty years, and from my more special study of the subject the last two years, I believe that a very considerable proportion of patients can be cured and remain well under a strict diet.

On study of the records of the cases here analyzed, there were eighty-one who were recorded as strictly faithful to diet, and twenty-four who were fairly faithful. There were thirty-two in whom the eruption was recorded as gone, and sixty in whom it was improved, and only sixteen in whom it was recorded as not improved, but of these, thirteen were not faithful to diet. Some of these patients have been seen later, for one reason and another, and remain free from eruption, but there are quite a number who return now and again, after a period of unfaithfulness to diet, with a greater or less amount of eruption.

Finally, it may be said without equivocation that the results of this plan of treatment, as watched by my several associates in years past and myself, and by physicians in consultation, and by very many most intelligent patients in private practice, far exceed anything which had been previously secured by the best of treatment at the hands often of the best men in the profession.

531 Madison Avenue.

ABSTRACT OF DISCUSSION

DR. D. W. MONTGOMERY, San Francisco: The etiology of psoriasis has always been a riddle to dermatologists, and no theory is satisfying and no line of treatment gives absolutely satisfactory results. Even if it be as Dr. Bulkley maintains, a nutritional disease, yet it certainly is not a disease of degeneration, as the people who have psoriasis are usually the strongest and healthiest of a community. It is rare to find a weakly, sickly individual with this disease. These people are strong and healthy, and have a beautiful white skin and muscles like iron. I knew a man in San Francisco who had psoriasis and whose eruption cleared up every time he went fishing. A ready explanation would be that his nutrition improved with the exercise and fresh air. I also remember that the late Dr. J. Nevins Hyde reported the case of a patient whose eruption cleared up on living naked in the strong sunlight of Arizona. This disappearance of the eruption under the influence of sunlight is interesting, because psoriasis rarely occurs on the exposed skin of the face and hands, and patches of psoriasis may be temporarily cleared up under *x*-rays. Whether light acts in psoriasis as light or as a nutritional agent is not known.

I have never tried Dr. Bulkley's diet, but I should think it a very difficult one to enforce. It is doubtful if a man could feel strong and well on an entirely nitrogen-free diet. It is my habit, however, to regulate the diet of these patients with the view that the eruption is connected with poisons of fermentation generated in the alimentary canal, but in regulating the diet I do not deny them meat.

Dr. Bulkley's observation in regard to the rarity of psoriasis in rice-eating countries is very interesting. I have long had my eye on rice as a most excellent starch. The Chinese have for ages lived, just on the edge of subsistence, with rice as their main food, and yet are a strong vital race. I do not think they could have done this on such a starch as potato. Martinet asserts that rice contains an antiseptic principle, and that under its influence indican disappears from the urine. There may be some connection between this antiseptic principle of rice, and the rarity of psoriasis among rice-eating peoples.

The darker races are very insusceptible to psoriasis. Psoriasis is almost never seen in the negro, although the negro is a heavy meat-eater. The freedom of the negro from psoriasis may be dependent on the peculiar insensitiveness of his skin to light. In fact, the freedom of all the heavily pigmented

peoples may rather be due to their peculiar reaction to light than to their lack of carnivorous food.

DR. J. S. TREWHELLA, Los Angeles: I would say from personal experience that a restricted nitrogenous diet has been beneficial to me. I would prefer to have psoriasis and have meats than be restricted.

DR. LAWRENCE LITCHFIELD, Pittsburgh: Is it not possible that by adding purin-free articles to his nitrogenous diet, Dr. Bulkley might get good results? It may be that the purin metabolism is at fault.

DR. L. DUNCAN BULKLEY, New York: I have not followed out the point made by Dr. Litchfield, but will take it up and report perhaps next year. In regard to living on that diet and keeping healthy, I have kept patients for weeks on rice, bread, butter and water, with only good effects. Indican disappears from the urine under this diet. If you see the Japanese and Chinese at work you will see what wonders they can do on rice. I have had people suffering from psoriasis for ten or twenty years in whom the eruption has faded away under a vegetarian diet alone. To show how rare psoriasis is among the dark-skinned races, who live on cereals, my son, who is a medical missionary in Siam, sent me recently a photograph of about the first patient with psoriasis that he had seen in six years there.

A REPORT ON THE USE OF CACODYLATE OF SODIUM IN FOUR CASES OF PELLAGRA

J. O. ELROD, M.D.
FORSYTH, GA.

Because pellagra is a new disease in this section of the country, because the number of its victims is increasing rapidly, and because the treatment has been so varied with so small a percentage of success, I am making a report of four cases. So far as I can gather from journals, or any publication on this disease, the profession has not decided what the cause of pellagra is; almost every one suggests a different cause. As we all like to know the cause of any trouble before we begin our treatment, it seems to me that our greatest work is to find out the cause of this disease, but while we are doing this we must not sit still and do nothing for the patient.

CASE 1.—*History.*—Mrs. S., aged 23, white, whose husband was murdered in December, 1909, had two children, one born November, 1905, the other, December, 1907. She said that erythema of the hands, and spots on the dorsa of the feet had first appeared during the spring of 1905 and 1906; these attacks she thought were eczema, and they passed off after a few months with local treatment. Erythema did not reappear until the spring of 1909, when it appeared on the hands, feet and elbows; again it disappeared with local treatment. During these times the patient was in a very run-down state of health, but though hardly able to be up, continued to do her housework. During the spring of 1910, there was some appearance of the erythema, but not very much. During the first days of January, 1911, the patient became so debilitated that she was not able to be up, the eruption began to appear on her hands, feet, elbows and a few places on her face. At this time she called in a physician, and after several weeks of treatment she continued to grow worse. February 12, she and her mother, with whom she was living, requested the attending physician to call in another physician with him. This he refused to do and dismissed the case. February 13, I was called to see her, and on examination I found her with a circulation of 110, temperature 101 F., very weak, not able to turn herself in bed, and very nervous. I found an eruption extending from the tips of her fingers along the backs of the hands up the forearm to within three inches of elbow, also spots on the point of the elbow, on the neck, around the ala of the nose, on the dorsa of the feet, on the knees, and for several inches around the anus. The character of the eruption was scaly, and pigmented around the edges; under these scales was a secretion of serum. All of the eruptions were very red and angry looking. The mucous membrane of the mouth showed a thick, and spongy appearance. The gums were thick and spongy, and would bleed from the least touch. The tongue was red and smooth, and had a velvety touch.

The patient had very little appetite, some nausea, vomiting, diarrhea, with from twenty to thirty bowel movements in twenty-four hours. The irritated condition of the mucous membrane of the mouth seemed to extend through the entire alimentary canal. She suffered with general muscular aching most of the time, slept well during most of the night, but very little during the day. The loss of flesh was very marked. The patient was extremely nervous, and at times had hallucinations and crying spells. For some time she suffered with diplopia; aside from this the eyes seemed to be all right. She had not menstruated for about twelve months.

Treatment.—On February 13, I gave the patient two ounces of castor oil, to clear out the alimentary tract; after this I gave her a combination of bismuth subnitrate and camphorated opium put up in lactated pepsin elixir, also a hypodermic injection of morphin sulphate, ¼ grain several times each day. For the eruption I tried an ointment of phenol (carbolic acid) and zinc oxid. For the mouth I gave an alkaline mouth-wash; for the weakened condition and rapid heart I gave strychnin nitrate, 1/30 grain, every four hours; all of these things I did up to February 24, and none of them seemed to do any good, as the patient gradually grew worse. On the above date, Dr. G. L. Alexander saw her with me and suggested that I give her cacodylate of sodium as an experiment, as it could do her no harm, and she did not look as if she could live but a few days. I gave her a hypodermic injection on that day, of 3 gr. of the sterilized solution of cacodylate of sodium. On the following day, the patient appeared to be very much worse, having all kinds of hallucinations, and talking incessantly for several hours. At this time her pulse was very weak and rapid, and she looked as if every moment would be her last. I gave her at this time a hypodermic injection of digitalin, nitroglycerin and strychnin, and kept her as quiet as I could with an occasional dose of morphin. February 26, she was very much improved. On account of her weakened heart action from the depression of the day before, I continued the digitalin, nitroglycerin and strychnin, giving it every four hours. I kept up the alkaline mouth-wash that I had given her in the beginning, and began using carron oil to soften the scaly eruption on different parts of the body. I continued the cacodylate of sodium injections, giving them every three days. After I had given her ten injections, the eruption had all disappeared and the parts showed only the appearance of new skin. The tongue had lost some of this redness, and the mucous membranes of the mouth had improved a great deal. The bowels began to check up after the third injection, and after the fifth, they did not move more than twice a day. The appetite began improving after the first injection, and temperature and pulse gradually went back to normal. As her appetite improved, the patient began gaining strength and flesh, and by March 1, she was beginning to sit up, and since that time she has menstruated. At the present writing, I give her the injection of sodium only once a week. This patient thinks she is cured, since she has no apparent symptoms, is able to visit her neighbors and to do most of her housework.

CASE 2.—*History.*—Mrs. D., aged 22, has no children. For the past two years she has experienced a general physical decline. She has been consulting me during this time, and I could never find anything organically wrong with her, though she continued to lose weight and strength. During the past spring I began to notice that her tongue was spongy, red and very smooth, and would bleed from very little irritation. I did not see her very often, and May 16 she came to me complaining that her hands had been blistered by the sun. On questioning her, I found that she had considerable irritation of the feet. On examination I found the back of her hands and several inches of the forearm in a blistered condition, as if done by the sun. The edges of the blistered parts were very brown. From the above symptoms I made a diagnosis of pellagra, and

began giving her every three days hypodermic injections of 3 gr. of the sterilized solution of cacodylate of sodium. The last injection I gave her was on June 8, at which time her condition was very much improved, and she had gained her strength so rapidly that she told me that she was well and did not believe she needed any more medicine, claiming that she felt better than she had felt in two years. All of her symptoms have entirely disappeared, and apparently she is well.

CASE 3.—*History.*—Mrs. R., aged 33, has had five children, the youngest of whom is two years old. While under my charge the past two years, she gradually lost flesh and strength, and I could find nothing organically wrong with her. I gave her tonics, digestants and everything I knew that might apply to the case, and failed to help her.

May 25 she called me in to see her; at this time I had not seen her for some weeks. She showed me a scaly eruption, which was all over her face and hands, and which did not look like any I had ever seen in cases of pellagra. Her tongue was red, and velvety to the touch; the gums were red and spongy and would bleed from very little irritation; the temperature and circulation were normal, the bowels were constipated, the feet burned and ached all the time. As the eruption in this case was different from any I had seen, I guardedly made my diagnosis pellagra, and began giving an injection of cacodylate of sodium every three days, also 2-dram doses, three times a day of elixir of iron, quinin and strychnin (U. S. P.). For her constipation I am giving her 1-dram doses of arom. fluid-extract of cascara sagrada once a day. The patient has improved gradually since the beginning of the above treatment and the eruption has entirely disappeared.

CASE 4.—*History.*—Mr. W., aged 49, farmer, past history negative. May 27, he came to me with back of hands and forearm half way to elbows looking as if they had been blistered by the sun, and told me he had burned his hands.

I had not seen this man for some time and I was very much surprised on weighing him to find that he had lost 32 pounds in the past six months. He told me he was troubled with indigestion and constipation all the time, that he had no appetite, and that he had lost his strength until he was hardly able to work. I found his mouth and tongue in the same condition as reported in the other cases. I began giving him a hypodermic injection of 3 gr. of the sterilized solution of cacodylate of sodium every three days, and in two weeks he had gained one pound, with no other treatment except the sodium.

REMARKS

Since we know very little as to the cause of this disease, I shall give some details as to the origin of these cases.

The patient mentioned in Case 1 lived nine miles from Forsyth during the first four years she had her first symptoms of the disease. Just one quarter of a mile from her home lived a man, 73 years of age, a patient of mine, who died of pellagra two years ago. This man was the father of Patient 4; before the father's death, the two lived in the house together. For the past year Patient 4 has lived in the house where Patient 1 had lived for four years. Near this house there is a small stream of water and a great deal of marshy land.

The mother-in-law of Patient 2 died of pellagra in November, 1906. I did not recognize it as pellagra at that time, but since knowing something of the disease, I realize that is what she died of. Patient 2 did not live near her mother-in-law at the time of the latter's death, but for the past three years she has lived within three hundred yards of the house in which her mother-in-law died, and has been on the decline all the time. Near this place is a stream of water with marshes around it.

The patient mentioned in Case 3 lives within one-eighth of a mile of a running stream of water; there are not very many marshes adjoining this stream.

Since reading an article by Dr. A. Cacini of New York,[1] also an abstract of an article of Dr. L. W. Sambon,[2] I have recalled that all of the patients afflicted with pellagra that I have ever seen have lived near a stream of water, and in the rural district! For these reasons I am beginning to believe the theory of these writers as to the cause of pellagra. From the cases I have seen, I believe it to be an insect-borne disease; I do not believe that the corn-bread theory is worth anything, since a good percentage of these patients have never eaten corn-bread. Patients 1 and 4 in this report have never eaten corn-bread to any extent. I believe that Patient 1 had the typhoid pellagra of which Dr. Cacini speaks. I also believe that her recovery would have been more rapid had I given her the injections of sodium more frequently.

THE PATHOLOGY OF JOINT TUBERCULOSIS*

LEONARD W. ELY, M.D.
DENVER

It may seem somewhat bold for an orthopedic surgeon to address the members of an august body like this on a matter pertaining to their own specialty, and were there anything like a unanimity among you, I should hesitate.

That the greatest confusion exists as to the pathology of joint tuberculosis, one can easily find by consulting a few text-books and by reading a few articles on the subject. This confusion, of course, is reflected in all the aspects of the disease, and until the exact pathology is laid down in full and comprehensive terms, it is futile to look for any scientific treatment of the disease. In other words, although the cause of the disease has been known for many years, the failure of the pathologist to place the pathology on a sound footing, is responsible for the chaos in the whole subject of joint tuberculosis.

In self-defense, then, I entered on this work, to see what I could find out for myself, and I shall here attempt to set forth as briefly as possible some of my findings. My material consists of about eighty specimens, supplied by various men. Most of the specimens consist of resected joints, some of amputated extremities, and a few of clippings from joints that had been opened for one purpose or another.

The first question to be discussed is, where joint tuberculosis starts and what tissues it affects. It starts in the marrow of the spongy bone ends or in the cellular synovia, and as long as it remains uncomplicated, it is confined to one of these two tissues or to them both. The bone itself, the cartilage and the ligament are damaged simply by interference with their nutrition, and may be said to play a purely passive part in the disease. The tendency in recent years in America has been to regard all joint tuberculosis as of bony origin, and the theory has the attraction of simplicity, but, starting out myself with this view, I have been compelled to abandon it.

A study of our specimens and of the histories of the patients from whom they were taken convinces me that primary synovial disease not only occurs but is quite frequent in adults. In children, disease of the bone-marrow predominates. The reason for this we shall presently see. Synovial tissue is distinctly vulnerable to

1. Cacini, A.: Med. Rec., New York, March 11, 1911.
2. Sambon, L. W.: THE JOURNAL A. M. A., July 23, 1910.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

tuberculosis. It is classed among structures of the lymphatic system. We find the disease rather frequently in tendon sheaths.

The next point is, why tuberculosis occurs in the extremities of the long bones and not in the shafts. As you know, various explanations have been advanced for this phenomenon, but as you also know, none of them has ever been accepted as adequate. Liability to injury has been said to be responsible, but trauma is no cause of tuberculosis, and if we injured a muscle or a ligament, or if we fractured a bone, we should not expect tuberculosis to ensue, and we must not forget that the tissues of a joint are adapted generally to the traumata to which they are exposed. Some say that the vulnerability is due to the arrangement of the blood-vessels, to the lack of anastomosis in the end arteries of the epiphyses in childhood, but the anastomosis is present in adults, and the lack of anastomosis in the blood-vessels of the brain, for instance, does not predispose to cerebral tuberculosis. To congestion has been ascribed a causal rôle, but congestion has been advanced as a means of curing the disease.

About a year ago, I proposed an explanation which appeared to me quite adequate, and I see no reason as yet to change my opinion. Bone tuberculosis is simply a question of red or lymphoid marrow. Wherever in bone we find lymphoid marrow, there we find the bone vulnerable to tuberculosis, and where we do not find it, there we do not find unmixed tuberculosis. This might be regarded as a coincidence, but the argument is reinforced by the fact that after a resection of a joint, the knee for instance, if bony union and primary healing be attained, the structure of the bone at that site changes from spongy to dense, and the disease disappears, whether or not we have removed all the infected tissue. There is no difference between dense and spongy bone except the arrangement of the lamellæ, the amount of bone, and the quality of the marrow, and we have already seen that the bone itself is never affected.

In the spongy bone we find the red or cellular, or lymphoid marrow, and where we find lymphoid tissue there tuberculosis can get a foothold. There is more red marrow in the bones of children than in those of adults. Hence, bone tuberculosis is more frequent in the former than in the latter. Primary tuberculosis of the shafts of the long bones has been described, but almost always, or invariably, of the shafts of children's bones alone, and red marrow exists in them. Joint tuberculosis is rare in children under 1 year of age. Their bone ends are composed almost exclusively of cartilage, and Rovsing has said that the joint tuberculosis of infants was probably always purely synovial. The yellow marrow appears to be invulnerable, but if a secondary infection be added then the disease may spread here also, as well as to other tissues also previously immune.

When we find a tissue subject to tuberculosis in a certain region and find further that when this tissue disappears, the disease dies out, we are certainly justified in regarding these facts as having some sort of a causal relation to the disease.

König has attached great importance to the precipitation of fibrin from the exudate in the joint. By means of this fibrin he has asserted that the cartilage is eroded and destroyed from the joint side, and that the synovia is infected from the exudate. In fact, he seems to assign to the exudate a very important part in the spread of the disease. I am forced to the conclusion that his examination of joints must have been almost exclusively macroscopic. I assign to the exudate a minor rôle and regard it more or less as a mere symptom, and quite unimportant in the pathology. I think the synovia is invaded by the primary tubercle in its substance, or else by a spread of the disease from the bone, where the synovia is attached at the margin of the cartilage.

The "layers of fibrin" which König describes on the cartilage, I think, are simply the evidence of the fibrillation of the superficial layers of the cartilage, caused by the interference with its nutrition and by the immobilization of the joint. The fibrillation can be plainly seen in sections. The cartilage may be perfectly smooth in joints which have been for years the seat of a tuberculous exudate. I have the joints to prove this. On the other hand, the fibrillation (or "layers of fibrin") may not be in evidence in a cartilage that has been lifted off the subjacent bone. If this bone is in good condition, that is, if the nutrition of the cartilage has not been involved, the cartilage will usually be found in pretty good condition. I believe that it is never damaged except from below.

The subject of rice bodies has also attracted some attention. Two theories have been held in regard to them: that they were the result of the precipitation of fibrin, or of a degenerative process. I consider them as the product of an effective attempt at repair, as the walling off of the tuberculous granulations and subsequent condensation and shrinking. One of our specimens (a knee-joint) contained a collection of them in a fibrous capsule. I think that the slide of this specimen is unique. The joint also contained a small encapsulated hematoma. Both are rare—one may be the later stage of the other.

PYOGENIC MEMBRANES

In almost all text-books tuberculous abscesses and sinuses are described as being lined by a pyogenic membrane; that is, by a wall of granulation tissue, filled with tubercles. The walls of these abscesses or sinuses, *if they are not infected secondarily with pus germs,* are composed of the necrotic tissue of the structures in which they lie. If the tissue is vulnerable to pure tuberculosis, then tubercles may be found in the walls of the abscesses or sinuses, otherwise they will not be found there. In a cross-section of the walls of a secondarily infected tuberculous sinus, tubercles will be seen, in one not secondarily infected they will not be seen. The importance of this fact to the subject of treatment is at once obvious.

What is the result of an old healed tuberculosis of a joint or of a tuberculosis thought to be healed? One hears the term "ankylosis" used somewhat at random, and more or less vaguely. In children, one may occasionally get a bony ankylosis, but only after a secondary infection. In not one of our specimens of adult tuberculous joints was a bony ankylosis present. I believe that it never occurs except after a resection.

As to healing, what may one expect? In a child, anything from good function and a practically complete cure, up to a bony ankylosis. In an adult, I believe that if the bone be involved, painless and useful function in that joint is at an end forever, and permanent healing under conservative treatment is very doubtful. In one of our resected adult knees, we found an old healed tubercle in the bone, just beneath the cartilage, buttressed off with fibrous tissue and bony trabeculæ, and yet, the disease must have broken out afresh or the joint would not have been excised. In another case, an ankle, we found an old tubercle buried in fibrous adhe-

sions. In some of our cases, the history runs back for years.

Finally, let me mention the unreliability of the examination of a clipping from a joint for diagnosis. Tuberculosis may exist in one part of the synovia and not in another. The reports of different laboratories from sections of the one joint will often differ. If tuberculous tissue be found, the report, of course, is final; if not, the joint may still be tuberculous.

Thorough mastery of the pathology of joint tuberculosis by the profession would soon put an end to the diverse, and sometimes fantastic, treatment of the disease, which now prevails.

440 Humboldt Street.

TONSIL INSTRUMENTS

RICHARD J. TIVNEN, M.D.
Instructor in Ophthalmology and Otology, Northwestern University Medical School; Member of Consulting Staff of the Cook County Hospital
CHICAGO

TONSIL HEMOSTAT

During a tonsil operation, it frequently occurs that after one tonsil has been removed a considerable period of waiting is necessary to control the resulting hemorrhage before the operator obtains a clear operative field and may, without annoyance from the hemorrhage, proceed to the removal of the remaining tonsil. In such cases my tonsil hemostat (Fig. 1) has proved efficient.

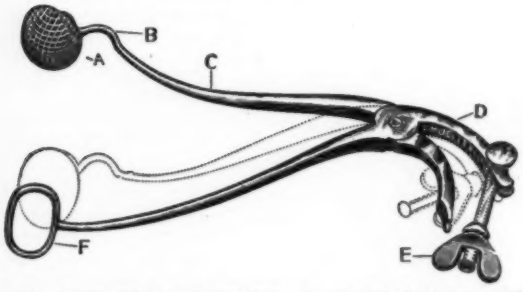


Fig. 1.—Tivnen's tonsil hemostat. A, serrated aluminum tonsil pressure bulb, oval in form to conform to tonsillar fossa. B, curve, which overrides the anterior pillar. C, arm, curved to rest, external to the teeth, between the alveolar process and the cheek. D, portion projecting from mouth. E, thumb-screw and swinging arm lock for securing instrument when closed and applied. F, the external fenestrated counter-pressure plate. The unbroken heavy lines indicate instrument when open. The dotted lines indicate its appearance when closed.

It arrests the hemorrhage promptly, eliminates the delay usually incident to its control, secures a clear operative field and thereby shortens the period of anesthesia, the time of operation and minimizes greatly the danger of subsequent hemorrhage. The special application of this hemostat is for the control of hemorrhage *during* the operation. It may be used, however, equally well for postoperative tonsillar hemorrhage.

Its application is expeditious and simple; it can be used for either tonsil without change or adjustment and being constructed entirely of metal, may be boiled without injury.

The clamping arms of the instrument are thin, light in weight, and, when in position, the inner arm and pressure bulb adapt themselves snugly to the tonsillar fossa and anterior pillar; beyond the pillar, the arm is so curved as to rest between the alveolar process and the cheek; while the portion of arm and lock protruding from the mouth is short, curved abruptly to the outer side, and entirely out of the way of the operator.

The field of operation is not in the least obstructed by its use and neither the subsequent introduction and manipulation of the necessary instruments for the removal of the remaining tonsil nor the technic of the operator need be curtailed, modified or embarrassed by its presence.

In using the instrument, I have found it of advantage to cover the oval bulb with three or four layers of sterile gauze, the ends of which are first trimmed short so they will not project into the operative field, then gathered together and secured just over the base of the bulb by an ordinary rubber band, previously sterilized. This covering is moistened with a 1-to-1,000 solution of epinephrin (adrenalin chlorid).

A pad of gauze is also placed just behind the angle of the jaw to protect it from the slight amount of pressure exerted at this point by the external counter device of the instrument.

The advantages of the instrument summarized are:

1. It arrests tonsillar hemorrhage promptly and is available for either operative or postoperative hemorrhage.

2. It can be quickly applied to either tonsil, without change or adjustment, and when in use does not in the least obstruct the operative field.

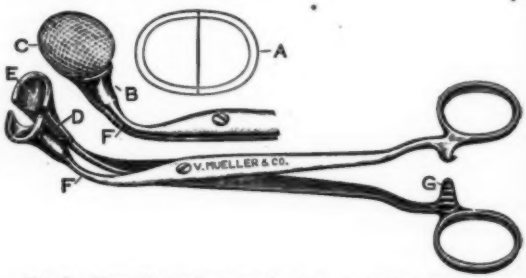


Fig. 2.—Tivnen's tonsil sponge forceps. A, outline of sponge-cup. B, base of sponge-cup. C, sponge in position. D, instrument opened to show serrated portion at inner side of cup base for retaining ends of sponge. E, receptacle for sponge. F, showing angle of sponge-cup to the handle. G, lock.

3. It is simple in construction, light in weight and being entirely of metal may be sterilized by boiling without injury.

4. The amount of pressure necessary to exert in controlling the hemorrhage is slight and when the pressure applied is judiciously graduated and not unnecessarily prolonged, the tissues are not traumatized and the patient is not subjected to additional hazard by its use.

5. By securing a clear operative field, it conduces materially to the carrying out of a satisfactory technic and surgical thoroughness, shortens the anesthesia and operative period, eliminates the hazard and annoyance of operative hemorrhage and minimizes the danger of subsequent hemorrhage.

TONSIL SPONGE FORCEPS

A satisfactory tonsil sponge forceps should be light in weight, simple in design, easily operated, carry securely a sponge of sufficient size and form to serve its purpose adequately and so constructed as to adapt itself readily to the oral cavity and tonsillar region.

My tonsil sponge forceps (Fig. 2) was designed to meet these requirements.

The instrument is provided with a lock to hold the sponge securely; the sponge receptacle is cup-shaped, oval in form to correspond to the general contour of the tonsil and tonsillar fossa; the "cup" in which the sponge rests is sufficiently large to accommodate a sponge of proper size; the edge or "flange" of the cup is overlapped by the sponge, thus presenting a smooth, cushioned surface, which minimizes the trauma to the tissues to which it is applied and in addition provides an even, firm resistance of a solid oval sponge-body, which exerts firm and evenly distributed pressure throughout every area with which is comes in contact.

The two halves of the sponge cup are serrated at their base to engage firmly the base of the sponge, which is inserted between them; the cup itself is placed at a slight angle to the carrying arm of the instrument to permit the operator an unobstructed view of the tonsillar area when applied and to promote facility of application to the depths of the tonsillar fossa. The sponges for the instrument are prepared by taking a small square of gauze, filling with cotton to the required size, and then gathering the ends of the gauze together over the cotton filling—much as a pouch is made.

The gathered ends of the gauze are twisted together and are then easily inserted between the open halves of

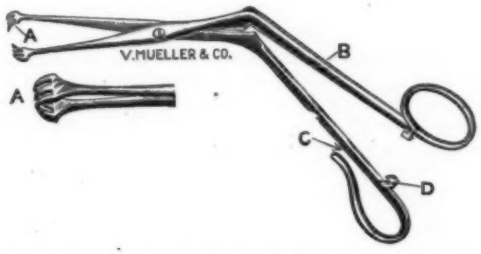


Fig. 3.—Tivnen's tonsil-grasping forceps. A, tonsil grasping portion. B, showing angle of handle to grasping arm. C, opening in finger ring for introduction of snare. D, lock.

the cup, which is closed and locked. Before operation, a sufficient number of such sponges are thus prepared and sterilized. From four to six sponge forceps should be at hand for the operation and during the operation the assistant is entrusted with the arming and disarming of the instrument.

ADENOID HEMOSTAT

The amount of blood lost in the removal of adenoids is usually considerable.

While the hemorrhage is not ordinarily considered of serious moment, occasionally, however, it is accompanied or followed by serious consequences to the patient. It is therefore the manifest duty of the operator to safeguard his patient in every possible way and to eliminate every factor which may endanger the patient's life or prolong his period of invalidism.

Viewed from this standpoint, the control of hemorrhage incident to the adenoid operation becomes a matter of importance and merits thoughtful consideration.

My adenoid hemostat is designed for the control of hemorrhage during or following adenoid operation.

In design and construction, this instrument differs in only one essential particular from the tonsil sponge forceps above described. In the adenoid hemostat, the sponge-cup is placed at nearly right angles to the carrying arm in order to accommodate itself easily to the nasopharynx, the angle of the sponge-cup to the handle, marked F in Figure 2, approaching more nearly a right angle in the adenoid hemostat.

The sponge used is previously prepared and its size is regulated from an estimate of the size of the patient's nasopharyngeal space.

After removal of the adenoid, the sponge is moistened in epinephrin (adrenalin chlorid) solution (1 to 1,000) and is quickly but gently applied to the nasopharynx, being introduced in the same manner as the adenoid curet. It is then pressed firmly against the vault of the pharynx and retained in this position until the hemorrhage has ceased, and is then slowly and gently withdrawn.

TONSIL-GRASPING FORCEPS

The advantages of this instrument (Fig. 3) are:

1. It is thin, light in weight and delicate in construction, thus permitting facility of operation and an unobstructed view of the tonsil and tonsil area.

2. The grasping portion is curved to adapt itself to the tonsil contour; the teeth, three in number, are edged, curved, spaced and approximate snugly to engage the tonsil easily and securely. This arrangement is of especial advantage in dealing with the so-called "submerged" variety of tonsil.

3. The handle of the instrument, being nearly at right angles to the grasping portion, the hand of the operator is situated out of the line of vision and thus

Fig. 4.—Tivnen's tonsil pillar separator. A, cutting edge of blade. B, handle. C, showing oval form of blade from side to side.

presents an unobstructed view of the field of operation at all times.

4. When the tonsil is once engaged the instrument is locked, and the tonsil remains secured until removed.

5. The snare is applied without releasing the tonsil, by entering the loop at the opening in the finger ring, sliding it over the instrument down to and over the tonsil.

TONSIL PILLAR SEPARATOR

The advantages of this instrument (Fig. 4) are:

1. It is of sufficient weight to impart a comfortable sense of resistance and balance to the operator's hand.

2. The length of the handle enables the operator to perform the necessary manipulation without obstructing the view.

3. The handle is round to permit rotation of the instrument and is serrated throughout so that it may be held firmly and securely.

4. The blade is placed almost at right angles to the handle; it is slightly oval from side to side to conform to the tonsil contour and is thinned and rounded at the point; and the cutting edge may be made sharp or dull.

32 North State Street.

THE INFLUENCE OF THE THYROID AND PARATHYROID GLANDS ON THE HEALING OF FRACTURES *

R. L. THOMPSON, M.D., AND J. L. SWARTS, M.D.
ST. LOUIS

Since skeletal disturbances are so striking a feature in athyreosis, it is easy to conceive that a fractured bone in an animal deprived of thyroid gland would suffer delay in healing. That this is true seemed to be proved by Steinlen in 1900, who, using young rabbits, observed a definite delay in the time of fracture healing in animal operated on. The same was explained as a result of the delay in callus formation and lack of calcium deposit, so that there was a persistence of uncalcified cartilage beyond the period when normal animals showed unmovable solid bone.

While the results of Steinlen seemed conclusive, they were attacked by Pezzolini (1903) who asserted that it was not the thyroid removal, but the general cachexia of the animal that retarded healing and regeneration.

Still more recently (1909) Canal, and also Morel, basing their assumptions on the theory of the relation of the parathyroid glands to calcium metabolism, found that fractures healed more slowly after complete parathyroid removal than in control animals. Jovane and Vaglio, however, dispute their results.

In our experiments we have attempted to observe the results of both thyroid and parathyroid removal on the time of fracture healing as well as a few attempts at the production of thyroid hypertrophy during the course of fracture healing. This work we consider incomplete, for, although over fifty dogs were used, so many factors enter into the cause of delay in fracture healing that much more work must be done before any definite conclusion can be drawn. Among the points to be considered are age, size and individual susceptibility in the different animals. Considerable variation (even to absolute lack of union) can be obtained by variations of the technic with which fractures are performed. It is needless to say, also, that slight inexactness in the apposition of the fractured fragments may give considerable differences in the size of the callus, and that the animal must be carefully watched throughout the whole course of the recovery to prevent injuries that might retard healing.

Aside from all this, the greatest difficulty which we encountered in this work was the complete removal of all thyroid tissue. Anyone who has worked with dogs knows how infrequently myxedema symptoms occur in these animals, even when all visible thyroid tissue is removed. We were able to account for this by the finding of pericardial thyroid tissue in 80 per cent. of our animals, as we have described elsewhere.

Taking all these varying factors into account, then, we give the following results of our work. The malar bone was selected in most instances for fracture. In some cases the femur was fractured. Most of the experiments were following complete thyroidectomy. One series was following mass ligation of the parathyroid glandules, since it has been shown that these organs may be gradually destroyed in this way without the sudden tetanic death which follows complete parathyroidectomy.

After the removal of all visible thyroid tissue and the attempt to leave behind at least two parathyroid glandules to prevent tetany, the animal was left for from two to eight months and watched for the development of signs of myxedema. Out of twenty-one animals thus operated on, only two developed distinct myxedema, as was shown by the increase in size, the thickening of the skin and subcutaneous tissue, and the falling out of hair. (Several animals in this series died from sepsis and tetania parathyropriva.)

By experiments on control animals, it was found that healing of the malar bone, when chiseled through and the fragments carefully approximated and covered with periosteum, showed practically complete healing in about forty days. While a number of animals were examined at shorter and longer intervals, it was decided to use the myxedematous animals for study of the bone thirty days after the fracture. Several of the thyroidectomized animals not showing myxedema were also examined thirty days after fracture, and normal animals with thirty-day-fractured malar also were used for control.

While differences were found in the amount of union that had taken place, these differences were greatest between different animals in the control series and not between the control animals and the thyroidectomized animals. For instance, there were two cases of lack of union and both were in control animals. In general, in the control animals and in the thyroidectomized animals, both with and without myxedema, practically identical pictures were obtained.

Macroscopically, the fractures were well united with little or no visible callus. When the bone was removed, fibrous union could be seen, and the section showed fibrous tissue between the bone fragments.

Microscopically, considerable difference is to be noted in individual animals in the amount of connective tissue between the bone fragments. This may vary from a hardly discernible line to the width of two-thirds of a low-power microscopic field. When the bone is fixed in Zenker's fluid and stained with Mallory's anilin-blue connective tissue stain, the calcium content of the bone usually takes a distinct brown (or brownish yellow) color. With this stain, no lack of ossification is to be observed in the thyroidectomized animals that is not shown in the control animals.

Following the negative results obtained in this series of experiments, a method was sought whereby the influence of the parathyroid glandules on the healing of fractures might, in some measure, be ascertained. Canal states:

> In my experiments on animals completely parathyroidectomized, I have observed that there is a delay in the healing of the fracture when compared with the animal of control under the identical condition of feeding and living. However, in experiments on animals partly parathyroidectomized, I have found that there is not the least delay in the healing.

While we do not know how Canal's results were obtained, one of us has shown in a previous article that dogs may be kept alive for some time even after complete destruction of the parathyroids if this is brought about by gradual destruction of the glands by mass ligation. The animal finally dies, but from cachexia instead of tetany, sometimes remaining in a state of torpor for several weeks.

Our experiments were carried out on only six animals in this series.. The femur was the bone selected for fracture. Control animals show complete repair in one month after fracture of this bone. No comparative results that we care to record were obtained with the animals operated on. The extreme cachexia which these animals suffer, when successful operative results are

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

* From the Department of Pathology, St. Louis University School of Medicine.

obtained, makes comparison with normal animals impossible.

In conclusion, we find that, in the limited amount of material which we have studied, the lack of thyroid tissue has no influence on the healing of fractures of the malar bone of the dog. We see at present no exact method of studying the results of complete parathyroid removal on the healing of fractures.

A TUBULAR SOFT RUBBER NASAL SPLINT THROUGH WHICH THE PATIENT CAN BREATHE *

MARK D. STEVENSON, M.D.
AKRON, OHIO

The nasal cavity is narrow, quite long anteroposteriorly and varies in height. Each cavity has two openings, one in front and one behind, of about the same size and nearly on the same plane. To prevent escape of blood from either side of the nose and thus to stop a nasal hemorrhage, it is only necessary to obstruct the two nasal outlets. This can be accomplished by various means, several of which I described in a former paper.[1] The 3-inch-long and ½-inch-wide solid cotton tampons therein described, which swell on absorption of moisture, effectually prevent hemorrhage and are sufficiently flexible to adjust themselves to the more or less tortuous nasal cavity, but nasal breathing and drainage are entirely prevented.

The hard rubber and metal nasal splints now on the market are open to the following objections:

1. They are not flexible and unduly press against certain parts of the nasal structures.

2. Their ends vary too much in size. The smaller end permits so little drainage that the secretions dry and form crusts before being discharged from the large outer end.

3. The smaller end is usually too nearly circular in shape, the nasal cavity is narrow but not vertically shallow.

4. A short splint or tampon tends to slip out of the anterior naris. The posterior end, usually near the part operated on, is pressed upward and outward by the congested tissues until the splint or tampon readily slips downward out of the nostril. This defeats the purpose of the splint, requires the surgeon's attention, or its replacement may be effected by dirty fingers with consequent danger of infection.

5. Only the anterior naris and the front part of the nose can be influenced by these short splints.

The splint or tampon which I am presenting to the Section has the following advantages:

1. It is sufficiently strong but soft and flexible, adjusting itself to any curves in the septum or outer wall of the nasal spaces, therefore causing no pressure necrosis and little or no distress.

2. It is of uniform size throughout, corresponding to the more or less uniform width of the nasal fossa and size of the anterior and posterior openings.

3. It may be cut any desired length. When used to prevent nasal hemorrhage it should be about 3 inches long, blocking both anterior and posterior nasal openings. When the tissues swell after the effects of the astringents used have disappeared, pressure is made against the splint, effectually retaining a clot within the nose.

4. Openings may be readily punched or cut with scissors in any part of the tampon to promote drainage or aeration. The remainder of the surface remains smooth, making removal painless.

5. When sufficiently long, 2½ or 3 inches, there is no tendency for the splint to escape from the nose. The pharyngeal constrictors push it forward sufficiently in the act of swallowing so that it does not press against the Eustachian tubes from which it is held medianward by the projecting turbinate. Its posterior end cannot tip upward sufficiently to permit the splint to slip from the nostril.

6. The anterior end of the splint can be cut at an angle to correspond to the opening of the nostril.

7. The splint may be used readily in the inferior part of the nasal cavity. When the upper part of the nose requires drainage or blocking, depending on whether there are openings or not in the sides of the splint, it may be cut a little shorter and the posterior end placed upward against or near the sphenoid or under the middle turbinate.

8. It is impossible, for lack of space, to place the metal or hard rubber splints far enough forward in the anterior part of the nasal space to support the nasal bones in case of fracture. These soft rubber splints can be placed well forward on either side or on both sides of the septum so as to support the nasal bones and septum. They can be prevented from slipping out of the nostril by adhesive strips from the cheeks across the nostrils.

9. These splints are useful to hold the septum in any fixed position after septal operations. If the septum tends to press to one side a splint on that side only will support it until fixed; in some cases a splint may be placed on each side of the septum.

10. With proper care, antiseptic or alkaline washes may be gently poured from an irrigator or fountain syringe through this splint cleaning it and the nasal fossa.

11. Very little distress is caused while introducing or removing the splint.

12. Air can readily pass through it, making the patient more comfortable.

The tampons or splints may be obtained in various widths and thicknesses and can be kept sterile, ready for use, in a weak dilution of liquor formaldehydi. Before they are introduced, a mildly antiseptic ointment, e. g., zinc oxid or 2 per cent. calomel ointment should be wiped over the outer surface of the splint. It may usually be removed within twenty-four or forty-eight hours, but if its use is required for a longer time its reinsertion is easy and painless. Ordinarily in inserting such a splint it should first be directed upward and backward until well within the nostril, then it should be gently pushed straight backward along the floor of the nose. If a long splint is pushed upward instead of directly backward it will come in contact with the middle turbinate or sphenoid causing distress instead of painlessly entering the posterior choana. The splint may be readily introduced by means of an alligator forceps passed nearly through it. The jaws of the forceps should be opened widely near the distal end of the splint to hold it from slipping farther on the forceps. If any part of the septum requires temporary support, which the first splint does not afford, a second short splint may be placed above the other or gauze packing may be inserted above any part of the splint. Clean air is the most healing balm to the inflamed or injured nasal mucous membrane and any solid substance in the nose acts more or less like a foreign body. Occasionally in nasal surgery, however, mechanical means to aerate, drain or hold certain parts in position are useful if not absolutely necessary.

165 East Market Street.

---

* Read in the Section on Laryngology, Otology and Rhinology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Stevenson, Mark D.: A Modified Simpson's Tampon to Prevent Nasal Hemorrhage, THE JOURNAL A. M. A., June 4, 1910, p. 1804.

LYMPHANGIOMATA OF THE OMENTUM AND OMENTAL CYSTS *

STANLEY STILLMAN, M.D.
SAN FRANCISCO

The two cases that form the basis of this paper are of interest, not so much on account of their rarity as for the corroboratory evidence they furnish of the correctness of the theory of Jacobi, that true serous cysts of the omentum all have their origin in the lymph-vessels of the omentum. The reported cases of lymphangiomata of the omentum are limited to very few. Only two have been actually reported as such—one by Dewitzsky and Morosow in 1895, who reported a case of "pouch-shaped lymphangioma of the great omentum," the other by Wakefield of San Francisco in a paper read before the American Gynecological Society on May 7, 1907. In 1903, Schramm reported a case in a female infant 1 year old which he characterized as "cystic degeneration of the omentum." Besides my own case, the only other is reported by Reginald H. Fitz of Boston in the course of the Lane lectures in San Francisco in 1910. It was a case of enormously dilated lymphatics of the omentum, occurring in a woman who also had a fibroid of the uterus to which the omentum was attached. It had been noticed first three years previously and since, had slowly increased in size. The omentum was reduced to a web of connective tissue supporting the tremendously dilated lymphatics. The case was one of Dr. G. W. Brewster's of Boston, and the patient was operated on in the Massachusetts General Hospital in 1910.

My own patient was operated on September 1 of the same year; the case was almost identical with that of Dr. Brewster.

The patient was a woman of 42, married, with one child. She came to me on account of an abdominal tumor, which she had discovered herself four or five years previously, and which had steadily increased in size. Within the last few months, she had suffered considerably from pain and dragging, more referred to the epigastrium than to the pelvis. Examination disclosed a tumor the size of one's head attached to the uterus but quite freely movable. Diagnosis was made of pedunculated myofibroma of the uterus. During operation, it was found that the pedunculated fibroid was also attached to the lower border of the great omentum by a pedicle, as thick as one's thumb, and containing many large blood-vessels. When the omentum was pulled down, it was found to contain between its peritoneal surfaces numerous elongated, tortuous, exceedingly thin-walled cysts, which were in many cases from 1½ to 2 inches in diameter toward the free border of the omentum, and some tapered off almost to a point as they approached the lower border of the transverse colon. They were distributed throughout the omentum and varied in size and length. The gastrocolic omentum was similarly affected but to much less extent, and none of the tortuous dilatations were larger than a lead pencil. The total bulk of the affected omentum was very considerable, and while feeling certain at the time that we were dealing with a condition due to enormously dilated lymph-vessels, I was uncertain what course to take, but finally removed the entire omentum after ligating along the lower border of the colon. The blood-vessels, particularly the veins, were enlarged, many to the size of a lead-pencil. In the gastrocolic omentum, there was considerable fat, and the dilatations were much fewer, varied in diameter at different points of their course, and were unmistakably dilated and tortuous lymph-vessels.

Below the transverse colon, together with the large cysts, were others identical in appearance with those just described in the gastrocolic omentum, and it was plain that all, even the largest, were cysts formed by more or less enormously dilated lymph-vessels.

The cystic dilatations all presented the same general characteristics. The thin, transparent walls were lined with endothelium as well as covered by it. The fluid was clear, amber-colored in some and rose-colored in others, and the specimen presented a strikingly beautiful picture as it was withdrawn from the abdomen. Many of the elongated cysts closely approximated each other at their distal, expanded extremity and were only separated by an exceedingly thin membrane. The fluid was neutral in reaction and coagulated on boiling. Microscopically, it contained lymphocytes, multinuclear leukocytes and red blood-corpuscles in varying proportion in the different cysts. The intervening omentum contained little or no fat.

The cysts in both these cases all showed a characteristic lobulation or sacculation comparable to that of the distended colon, as can be seen in the photograph of Dr. Brewster's case. This is an important point, for it was noted in the case of Gairdner in 1851, the first reported case of cyst of the omentum, and proves his case to have been also really a cystic lymphangioma. The case was that of a woman who died unexpectedly and on autopsy was found to have a large fibroid uterus; in addition, a cyst was found, between the folds of the great omentum, measuring between 3 and 4 inches in length and from ½ inch to 1½ inches in diameter. "It was lobulated externally like that of the distended colon but in no part subdivided by complete septa, the fluid was a transparent colorless serum containing numerous flocculi." This case is unquestionably one of cystic dilatation of a single lymph-vessel. Whether in these two cases just reported, the adhesion to the fibroids bore any causal relation to the dilated lymph-vessels, I cannot believe, for the reason that such adhesions of the omentum are very common, but a resulting condition of the lymph-vessels, such as occurred in these cases, has never before been recorded. On the other hand, serous cysts of the omentum have formed adhesions at times to the parietes and other viscera, as might be expected, and very likely would form adhesions to a fibroid. That both these almost unique cases should have had so many other points in common, only goes to substantiate the doctrine of duality in rare affections.

The chief points of interest in these two cases are: first, the fact that the elongated cysts were unquestionably dilated lymph-vessels; second, that in many cases they were only separated by an exceedingly thin wall or septum; and third, that the blood-vessels between them and over them were in many cases greatly dilated.

Passing now to the consideration of cysts of the omentum, I am of the opinion after a critical review of the literature on the subject, that there have been twenty cases of serous cysts recorded, including one about to be recorded by me. To these, the cases of Brewster and myself may be added as multiple cystic lymphangiomata of the omentum, making a total of twenty-two cases. The case just referred to was seen some years ago in consultation with the late Dr. Brigham of San Francisco. The patient was a woman of 30, who had

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911

herself discovered a tumor in her abdomen five years previously. It had never troubled her but had slowly increased in size. On examination, a firm but elastic tumor about the size of the closed fist and movable in all directions was found a little to the left of the middle line of the abdomen just below the umbilicus. Apparently it was not attached to the uterus or ovary, both of which appeared to be normal. A diagnosis of either omental cyst or an ovarian cyst with a very long pedicle was made, on account of the absence of symptoms and the very free mobility. Operation was advised, but the patient declined to submit. A year later, however, the tumor was removed by Dr. Brigham, who found it was a unilocular cyst containing a pint of clear straw-colored fluid. Its walls were thin and covered with endothelium on both external and internal surfaces. It had no pedicle but was within the omentum, a considerable portion of which was removed with the tumor. The fluid was not examined.

Hasbrouck,[1] in 1907, collected reports of all the cases of cysts proper of the omentum up to that year, and placed the number at twenty, including his own. He did not, however, include a typical case of serous cyst reported by Schwarzenberger and operated on by Czerny in 1894, but he included several cases that, like his own, were malignant growths of the omentum with cystic degeneration and hemorrhages, and one that was due to perforation of a traumatic ulcer of the stomach, which had been protected by the omentum within the folds of which was a collection of sour-smelling fluid, containing particles resembling stomach contents, and which does not deserve to be called a cyst at all. Since his very complete abstract of cases in 1907, there have been cases of true cysts of the omentum reported by Wakefield in 1907, Seefisch in 1909, Rodman in 1909 and Gifford in 1910.

From this record, it is evident that true cysts of the omentum are of rare occurrence. Of reported cases of omental cysts in general, a few are hydatids, primary in the omentum (as is certainly possible) or cysts which, originating in the liver, have become attached to the omentum and in time become entirely separated from the liver, as is believed to be always the case by some observers. Several of the tumors are dermoid cysts, others are cysts decidedly of an ovarian character, either attached to the omentum or enveloped in it. These are believed to have had an ovarian origin in the first place, and subsequently gaining their blood-supply from the omentum, through adhesions, have gradually become detached from the ovary until they are at last entirely free from it and nourished by the omental vessels alone. In one such case reported by Ormsby,[2] the fimbriated extremity of the Fallopian tube was attached to a large cyst which was entirely free in the abdominal cavity except for an attachment to the omentum. It is not improbable that some of the solid tumors of the omentum originate in the same way. In my case, the pedicle connecting the fibroid with the uterus was considerably smaller than the one connecting it with the omentum, and was much less vascular. It seems very reasonable that in time it might have been entirely separated from the uterus. Chylous cysts of the omentum are not found in the omentum at all but in the mesentery, and not a single one is recorded in spite of the statements of some writers that they occur. Degeneration of lymph-glands, giving rise to semi-cystic growths in the mesentery, are recorded, and Rokitansky attributed the origin of some cysts of the omentum to this source, but I cannot find any record of such. Primary malignant disease of the omentum is not so infrequently met with, and may undergo cystic degeneration, and from hemorrhage give rise to enormous cystic tumors containing blood, as described by Hasbrouck. In some of the cases, it has been difficult to make out from the records whether they were of malignant origin or not, and these I have classed as doubtful; particularly is this the case where the cysts were multilocular and the contents greatly altered as a consequence of ancient hemorrhages into them. Secondary involvement of the omentum in malignant disease is quite common and of no particular interest whether cystic in character or not. Altogether there are recorded up to January of this year forty-three cases of cysts of all kinds, within or dependent from the omentum, which number the cases of Dr. Brewster and myself bring up to forty-six. Of the twenty-two which I believe to be true serous cysts, nine occurred at ages from 1 to 4 inclusive; six occurred from 5 to 11; the ages of the other patients were 17, 19, 22, 30 and 42, the remaining two were adults, age not stated; sixteen were females, six males.

If, however, one arranges these cases according to the ages at which the abdominal swelling was first noticed, we find that four and possibly five occurred between 1 and 2 years, six between 2 and 4 years, five between 4 and 10 years, three between 10 and 20 years, and only four above 20. In one of the last-mentioned cases the patient noticed the tumor six years before operation, at which time she was 21. In the remaining three cases the trouble was discovered by accident either at operation or autopsy

Abstracts of the histories of these cases are as follows:

CASE 1 (GAIRDNER[3]).—Woman, age not stated, died unexpectedly. At autopsy she was found to have a large fibroid uterus. In addition, a cyst was found between the folds of the great omentum measuring between 3 and 4 inches in length, and from a half an inch to 1½ inches diameter. It contained a transparent colorless serum, containing numerous flocculi.

CASE 2 (GOODING[4]).—Girl, aged 18, noticed a lump about the size of a hen's egg low down in the right iliac fossa, which was painful, chiefly at menstruation. At time of operation, four years later, it was the size of a cocoanut. It was diagnosed as an ovarian cyst with a long pedicle. Operation disclosed a cyst in the gastrocolic formation firmly adherent to the parietal peritoneum and imbedded in the folds of the omentum. There was no pedicle.

CASE 3 (SPENCER WELLS[5]).—Girl, aged 5, had had a large abdomen since infancy, growing steadily for past two years. On operation a single cyst of the omentum was found attached to the abdominal wall and cecum. It contained four pints of a clear, watery fluid. In the upper part of the omentum were a few small cyst-like collections of fluid resembling grapes. Some were removed, others simply pricked. A specimen was examined by Ransom, who found it to consist of three very thin-walled cysts, the largest holding a quart, the next half a pint, the smallest the size of an egg. There was no endothelium on the inner surface. He states that it was not hydatid; but he thought perhaps it was inflammatory.

CASE 4 (ERDHELM[6]).—Woman, aged 22, had a tumor, first discovered five years before, without known cause; according to the patient's account it reached its present growth in fourteen days. Operation disclosed a bluish, transparent cyst wall adherent over a wide area and covered with omentum. The tumor reached from the transverse colon to the bladder and had no conection with any of the pelvic organs.

1. Hasbrouck: Ann Surg., 1908, xlviii, ii, 206.
2. Ormsby: Brit. Med. Jour., 1883, i, 578.
3. Gairdner: Tr. Path. Soc. London, 1851-52, 374.
4. Gooding: Lancet, London, 1887, 311.
5. Wells, Spencer: Brit. Med. Jour., 1890, 1362.
6. Erdhelm: Wien. klin. Rundschau, 1896, x, 131.

Case 5 (Marfan[7]).—The patient was a girl, aged 2½ years. Her mother had noticed that the abdomen had always been large and at the age of 15 months the enlargement began to increase and continued to do so steadily for the succeeding year. The general health was not affected until a few weeks before operation, when the child began to emaciate. An aspirating needle was inserted and about two liters of black hemorrhagic fluid evacuated. This gradually reaccumulated, and it was decided to operate. Operation revealed a multilocular cyst within the folds of great omentum. It had a pedicle and contained a large quantity of bloody fluid.

Case 6 (Hearn[8]).—The patient was a boy, aged 8. At birth, his physicians noted that the abdomen was markedly distended. This disappeared after a few weeks and was not again noticeable until he had become 6 years of age, when the abdomen began to distend. In the meantime, he enjoyed good health. Although the abdomen increased rapidly in size, the only difficulties he experienced were those due to distention and pressure. The abdomen was enormous, measuring 44 inches in circumference, and an omental cyst was suspected, owing to lack of symptoms of other troubles. Operation disclosed a cyst containing a dark yellowish-brown, turbid fluid and many other cysts. After evacuating a number, the mass was drawn out and found to be attached to the great omentum, between the folds of which it had developed. The fluid was alkaline in reaction and contained a large amount of albumin. Jacobi regarded this as a case of hydatid cyst and instanced it as a warning of the care and circumspection required in making an accurate diagnosis in cases of cysts of the omentum. From the history, however, I cannot see why this statement should have been made.

Case 7 (Braithwaite[9]).—Girl, aged 4, measured 22¾ inches at level of umbilicus; this had increased during two months. The tumor was found to be entirely within the folds of the great omentum and with the exception of adhesions to the intestine was easily removed. It contained 3½ pints of fluid.

Case 8 (Jacobi[10]).—The patient was a girl, aged 7. Four years previously the abdomen began to swell and the child lost weight. A diagnosis of tuberculous peritonitis was made, the abdomen tapped and two quarts of a clear, slightly bloody serum was drawn off. After two years the swelling returned and was tapped a second time. Subsequently it was operated on. Operation disclosed a large cyst, containing about 2 quarts of fluid, with a number of recesses communicating with the main cyst. It involved the greater part of the great omentum and narrowed into two pedicles as it approached the colon. The cyst was lined externally and internally with endothelium. The contents were gelatinous and finely granulated, and consisted of coagulated serum with multinuclear and eosinic forms of leukocytes, endothelial cells and a few red blood-cells. Staining by Weigert's method showed absence of fibrin.

Case 9 (Marsh and Monsarratt[11]).—The patient was a girl, aged 1 year 8 months, whose abdomen was noticed to be enlarged about four months previously, but there was no complaint of pain. It was tapped four times. Operation showed a thin-walled multilocular cyst springing from the gastrocolic omentum and entirely enveloped in it. It contained about 10 pints, and consisted of one large cyst and many independent smaller ones, and it had an attachment to the right iliac fossa. The external surface was covered with endothelium; internally it was lined by a coat of fine connective taissue containing numerous blood-vessels. The walls of the smaller cysts were better defined and afforded better support for the blood-vesels than in the large cyst, where the vessels were large and thin-walled.

Case 10 (Schramm[12]).—Female, aged 1 year. Swelling of the abdomen noticed four months before. Operation disclosed the fact that the entire omentum was made up of a conglomeration of cysts, varying in size from that of a nut to twice the size of the fist. About 3 or 4 cm. of the omentum, next the transverse colon, was quite normal. The cysts contained a clear rose-colored fluid.

Case 11 (Boyd[13]).—The patient was a boy, aged 11, whose health was excellent until a few months before operation, at which time, his abdomen began to swell and the swelling steadily increased. He had constant pain in the lower abdomen, but never of a severe character, and he had become much emaciated. Operation disclosed a large, thin-walled cyst covered by and occupying the cavity of the great omentum and containing a large amount of greenish-brown fluid. The cyst was attached to the pancreas, but did not spring from it.

Case 12 (Schwarzenberger[14]).—Girl, aged 4¾ years, was operated on by Czerny. The cyst contained 3 liters of a clear serous fluid, and was multilocular. It was diagnosed as a lymph-cyst of the great omentum.

Case 13 (Young[15]).—Girl, aged 9½ years, had a swelling, noticed for more than a year previous. There was no pain. At operation, a thin-walled cyst was found containing many other cysts. It involved the anterior layers of the great omentum, part of which was normal and adherent to the stomach. It contained 32 pints, besides 5 or 6 that were lost on the floor, of a dark brown fluid, which was evidently broken-down blood and serum. The fluid in the cyst was not examined.

Case 14 (Matthews[16]).—Boy, aged 8, nine months previously he had complained of pain in the left side, following which there was a gradual distention of the abdomen. This continued till the abdomen measured 27 inches. On operation a cyst was found containing 6 pints of a dark brown fluid. It was attached to the transverse colon by a thick pedicle, made up of omentum.

Case 15 (Fort[17]).—Girl, aged 2½, had an abdominal enlargement, noticed eighteen months previously. At the time of operation the abdomen measured 28 inches. There were no symptoms other than dyspnea. Operation disclosed a cyst between the layers of the great omentum containing an enormous collection of fluid. There was an absence of distinct capsule other than the peritoneal covering of the omentum, the fluid being between the folds of the omentum.

Case 16 (Wakefield[18]).—Boy, aged 4, had an enlargement of the abdomen; noticed at least two years before. At the time of the operation, the abdomen was enormously distended. Operation disclosed a tumor larger than a man's head, consisting of a number of various sized thin- and clear-walled cyst chambers, the bulk of the mass being made up of a single cyst. The fluid contained in the cyst was clear, straw-colored and neutral in reaction. It coagulated on heating with a drop of acetic acid.

Case 17 (Rodman[19]).—Patient was a girl, aged 17. On operation, a cyst which, together with its contents, weighed 60 pounds was found beneath the parietal peritoneum, covered by another layer of peritoneum. It had no pedicle, was unilocular and contained a clear fluid. It shelled out like a walnut, only one small vessel being tied.

Case 18 (Seefisch[20]).—Patient was a boy, aged 4, whose mother had noticed a swelling in the abdomen a short time before. On operation, an enormous cyst was found dependent from the hepatic flexure of the colon by a pedicle the thickness of a lead-pencil. The contents measured from 2½ to 3 liters. The wall of the cyst was very thin and consisted only of the web of the great omentum.

Case 19 (Gifford[21]).—Boy, aged 6, had a swelling, first noticed six months previously, when the patient complained of pain in umbilical and hypogastric regions. On operation, a cyst the size of a cocoanut was found in the substance of the omentum and was adherent to the anterior abdominal wall. The omentum was ligated and divided and the cyst easily removed. It was multilocular and contained a clear straw-

7. Marfan: Presse. méd., 1896, p. 133.
8. Hearn: Ann. Surg., 1897, xxv, i, 703.
9. Braithwaite: Lancet, London, 1898, ii, 1472.
10. Jacobi: Tr. Assn. Am. Phys., 1901, xvi, 232.
11. Marsh and Monsarratt: Brit. Med. Jour., 1901, i, 511.
12. Schramm: Zentralbl. f. Chir., 1903, xxx, 564.
13. Boyd: Clin. Jour., 1903, xxi, 306.
14. Schwarzenberger: Beitr. z. klin. Chir., 1894, xi, 713.
15. Young: Lancet, London, 1905, i, 157.
16. Matthews: Brit. Med. Jour., 1905, ii, 1642.
17. Fort: Ann. Surg., 1907, xlv, iii, 382.
18. Wakefield: Surg., Gynec. and Obst., 1907, v, 227.
19. Rodman: Ann. Surg., 1909, xlix, 427.
20. Seefisch: Deutsch. med. Wchnschr., 1909, xxxv, 1790.
21. Gifford: Brit. Med. Jour., 1910, 1289.

colored fluid. The interior of the cyst wall was lined with a smooth membrane.

There are three cases that I regard as doubtful. One is a case reported by Simon[22] in 1858. The patient was a man, 44 years of age, who had a large tumor of the abdomen, which had been present to his knowledge for twelve years. It had never pained him. He died five days after admission to the hospital, and at autopsy a thick-walled cyst was found in the omentum, full of coagulated blood. It might have been an endothelioma or some other malignant growth with cystic degeneration. Another case was reported by Cazin,[23] in 1893. The patient, a man aged 48, had a tumor which had developed without known cause and had gradually enlarged. It was diagnosed as a cyst of the pancreas, but operation showed it to be a cyst of the great omentum adherent to the large intestine. The third case was reported by Edebohls,[24] in 1893. The patient, a woman aged 37, had noticed the enlargement eight months previously. On operation, a cyst containing a chocolate-colored fluid, was found attached to the lower border of the omentum by a pedicle 10 cm. wide and 2 cm. thick. A large circular area opposite the pedicle was gangrenous. The case was probably originally a cyst of the ovary with a pedicle, which had become attached to the omentum and subsequently separated from the ovary.

There are several cases to the histories of which I have been unable to gain access. Dewitsky and Morosow[25] in 1905 reported a case of "pouch-shaped lymphangioma of the omentum." Giannettasio[26] in 1907 reported a case of blood-cyst of the omentum. Karas[27] reported a case of multilocular cyst of the omentum in 1907. Holleman[28] reported an omental cyst in 1908. Costa[29] reported a case of cyst of the great omentum in 1908. Villar[30] reported a case of cyst of the lesser cavity of the omentum in 1908. These, however, I do not think would affect the general conclusions arrived at in this paper.

As to the etiology of the conditions of the omentum with which this paper is principally concerned, Jacobi stated in his paper on "Cysts of the Omentum" read before the Association of American Physicians in 1901, that he believed most, if not all, of them had their origin in the lymph-vessels of the omentum. Hasbrouck believes most of them to be endotheliomata and disbelieves that many have a congenital origin. Wakefield believes most of them to be lymphangiomata. Many express their belief in a congenital origin of their own particular cases.

It is exceedingly significant that the swelling of the abdomen was first observed at some period between 1 and 10 years of age in fifteen of the twenty-one patients operated on, and in ten of these, or nearly one-half of all the cases, the swelling was noticed between 1 and 4 years of age. This, I think, must speak for a congenital origin.

We find congenital cystic lymphangiomata in other parts of the body, notably in the tongue and root of the neck, and I think the condition in question comparable to the latter—the so-called "cystic hygroma of the neck" which may attain a very considerable size.

22. Simon: Bull. Soc. anat. de Paris, 1858, xxxiii, 30.
23. Cazin: Bull. Soc. anat. de Paris, 1893, lxviii, 312.
24. Edebohls: New York Jour. Gynec. and Obst., 1893, p. 614.
25. Dewitsky and Morosow: Arch. f. Kinderh., 1905, xiii, 247.
26. Giannettasio: Gaz. d. osp., 1907, xxviii, 939.
27. Karas: Virchow's Arch. f. path. Anat., 1907, clxxxviii, 138.
28. Holleman: Zentralbl. f. Gynäk., 1908, xxxii, 297.
29. Costa: Gior. internaz. d. Soc. med. Napoli, 1908, xxx, 355.
30. Villar: Jour. d. méd. de Bordeaux, 1908, xxxviii, 219.

The two cases that form the basis of this paper were in adults and were unquestionably cystic lymphangiomata—so also was Gairdner's case.

In Hearn's case the abdomen was noted to be enlarged by the patient's physician at birth, but as the child grew the swelling disappeared, to be noted again at 6 years, from which time it increased till operation two years later. Spencer Wells' patient had three large cysts and many independent smaller ones, some of which were pricked and others removed. This case was in a child of 5, whose abdomen had slowly increased in size since infancy.

In Jacobi's case, the swelling of the abdomen was noticed when the child was 3 years of age. A large cyst was found, which had many recesses communicating with it through large openings.

In Marsh and Monsarratt's case, in an infant in whom swelling of the abdomen was noticed at 16 months of age, a large cyst was found and many independent smaller ones.

Schramm's case was in an infant of 1 year. Operation disclosed the fact that the entire omentum was made up of a conglomeration of cysts varying in size from that of a nut to twice the size of the fist. The 3 or 4 cm. of the omentum next the transverse colon was quite normal. This description might very well be applied to either Dr. Brewster's case or mine.

Wakefield's case had a tumor consisting of a number of various-sized thin- and clear-walled cyst chambers, the bulk of the mass being made up of a single cyst. The swelling of the abdomen was noticed first at 10 years of age and the child was operated on two years later.

In most of these cases the cyst contents were similar to those found in the three cases in adults that were discovered accidentally.

It would seem that the variations in the individual cases can be readily explained as follows:

In some there was but a single lymphangioma, as in Gairdner's case; in others, many of them. As these increased in size, the delicate septum between some of them broke down forming a large cyst around or within which were others in which the septum was intact; thus a multilocular cyst would be formed of various-sized cysts around a large one.

Jacobi's case would seem to bear out this idea, for in his case portions of the septa were left between the cysts and the cyst narrowed into *two* pedicles as it approached the colon. In some cases the cyst was lined with endothelium, in others not. The latter would be very likely the case if the cyst or cysts ruptured between the layers of the peritoneum constituting the omentum, and increased in size by simply separating these layers.

It was noted in many of the cases, particularly of the larger cysts, that the blood-vessels were large and thin-walled and poorly supported by connective tissue, and it is reasonable to suppose that these dilated and thin-walled vessels should also occasionally rupture. This admixture of blood at various times and in various amounts, with the original cyst contents, would explain the difference in the character of the fluid found in different cysts and also perhaps the rapidity of growth observed in some of the cases.

These various changes might take place slowly or rapidly—in most cases rapidly, as shown by the fact that operation was called for in so many of the cases within the first ten years of life. In others no inconvenience was occasioned till later in life and in some the

condition was only discovered by accident, either at operation or at autopsy.

So far as diagnosis is concerned, it has been observed by all writers that this is practically impossible before operation. Most of the cases have been mistaken for tuberculous peritonitis with ascites, or for an ovarian cyst with a long pedicle. In cases of moderate-sized cysts originating below the colon, in which adhesions have not taken place, the free mobility and absence of symptoms referable to any other organ might give rise to a suspicion of the nature of the cyst. In those that fill almost the entire abdomen or are adherent, or originate in the gastrocolic omentum, the diagnosis is practically impossible before operation. All of these patients recovered from operation, although some of the cysts were enormous. In Rodman's case, in a girl of 17, the cyst and contents weighed 60 pounds, and in Young's case, in a girl of 9½, the contents measured 32 pints, besides 5 or 6 that were lost on the floor.

Dr. Fitz stated, in regard to my case of multiple cystic lymphangiomata, that, had I not removed the omentum, there was every reason to believe that in time a large cyst might, could or would have developed. I think there is every reason to believe that in all these cases of true serous cysts, the cysts could, would and did develop from congenital cystic lymphangiomata of the omentum.

2101 Webster Street.

ENDEMIC MEDITERRANEAN FEVER (MALTA FEVER) IN SOUTHWEST TEXAS

THOMAS L. FERENBAUGH, A.B., M.D.
First Lieutenant Medical Corps, U. S. Army; Surgeon, Camp U. S. Troops, Del Rio, Texas

During recent years there have been a few cases of continued fever of long duration, frequent relapses and a low mortality, in the Pecos River country. Four such cases recently occurred in the practice of Dr. R. M. Scott, of Del Rio. The four patients, all young men from 11 to 20 years of age, had worked at a goat camp where they had lived for three months, quartered in a house surrounded by the dusty bedding ground of the goats and were using goat's milk from the herd, some of which were ill of "goat fever." The fact seemed significant and it was suggested by me to Dr. Scott that the fever was possibly Mediterranean fever. After agglutination tests had been made with the *Micrococcus melitensis* on the four cases with positive results, Dr. S. L. Boren mentioned that he too had a patient, a goat ranchman, ill of continued fever with symptoms not unlike those manifested by the four boys. An agglutination test with the *Micrococcus melitensis* was positive in this case also.

The following is a brief history of each case and the result of the agglutination tests. Malaria was excluded in each case by blood-examination. Quinin given in large doses over a period of two weeks had no marked effect on the temperature in any of the five patients.

CASE 1.—C. E., aged 12, was a goat herder, whose family and personal history were unimportant, except that the patient had chills and fever three years ago in east Texas. The present illness began May 10, 1911, with slight evening temperature, chilly sensations, headache, especially pains at the back of his neck and in right ear. The patient had general aches and pains, especially in both knees, wrists and arms. He was brought to Dr. Scott at Del Rio for treatment, May 19.

Examination.—The patient was found to have an enlarged spleen, tympanites, profuse sweating, nose bleed and obstinate constipation. Both wrists were painful on pressure. The temperature ranged from 102.5 to 103 F. From June 20 to 23 the patient was free from fever, then it returned to 103 without obvious cause. He had diarrhea for two days followed by obstinate constipation, pains all over the body, tympanites, and profuse sweating as before. July 1, he appeared very emaciated, anemic and severely ill. His temperature ranged from 99 to 102.5 F. daily.

Agglutination tests—macroscopic method: *Bacillus typhosus*, 1-50, negative. *Micrococcus melitensis*, 1-50, positive in 15 minutes. Normal control—negative.

A report from the Maneuver Division Laboratory, San Antonio, Texas, by Lieut. George B. Foster, M.C., and Lieut. Taylor E. Darby, M.C., stated that serum from Case 1 gave positive agglutinations with the *Micrococcus melitensis* in dilutions of 1-80, 1-160 and 1-320 in 10 to 45 minutes by both the microscopic and macroscopic methods. Typhoid control, 1-40 negative; normal controls, 1-20 negative.

CASE 2.—L. E., aged 11, was a goat herder, whose family and personal history were unimportant, except that the patient had chills and fever in 1908 in east Texas. The patient became ill May 16 when he began having an evening temperature, headache, ear-ache and pains in the back of his neck. At times he felt chilly, but he had no definite chill. He went to bed May 20, and May 30 he was brought to Del Rio. When the patient arrived, he had a slight temperature, but it soon returned to normal and remained so for five days when it returned to 101 F. followed by diarrhea and two days later by obstinate constipation. The temperature remained at 99-100.4 F. until June 20 when it again became normal for three days. The fever returned and remained at 99-100.2 F. until July 1, when it reached normal. During the last relapse the patient suffered severely with his hip, which was so painful it could not be moved. At present he is somewhat emaciated and very anemic.

Agglutination tests—macroscopic method. *Bacillus typhosus*, 1-50, negative. *Micrococcus melitensis*, 1-100, positive in 20 minutes. Normal control, negative.

CASE 3.—K. E., aged 12, was a goat herder, whose family and personal history were unimportant, except that the patient had chills and fever in east Texas in 1908. The patient became ill May 20 with fever at night, headache, pain in the back of the neck and ear-ache. He ached all over, being especially sore in his arms. The bowels were constipated. When brought to Del Rio for treatment, he had some tympanites, enlarged spleen, profuse sweating and nose bleed. His temperature was 100-101 F. June 18, the temperature returned to normal, but June 20 it went up to 104 F. followed by diarrhea, headache, and profuse sweating. The fever then remained at 100-101 F. and July 1 it had again reached nearly normal. He is also anemic and somewhat emaciated.

Agglutination tests—macroscopic method. *Bacillus typhosus*, 1-50, negative. *Micrococcus melitensis*, 1-50 positive in one hour. Normal control, negative.

CASE 4.—R. E., aged 20, was a goat herder, whose family and past history were unimportant, except that the patient had pneumonia in 1907. He became ill May 20 with slight sore throat, headache, bone-ache, "dumb chills" and fever, first in the morning, but later it became high at night. The patient had a cough and spit up stringy sputum. The bowels were normal and the appetite good. After the illness began, the patient left home and traveled through Mexico and New Mexico where he consulted several physicians who advised him to go to a hospital. After spending a few days in a hospital in El Paso, he came to Del Rio, June 10. When seen by Dr. Scott, he had tympanites and enlarged spleen. His temperature was 99-99.5 F., but became normal June 15. June 18, he returned home and the fever again appeared with intense pain in his shoulder and knee and later in the elbow. When seen by me, the patient would cry out if any attempt was made to move his elbow or shoulder. He is very anemic and looks decidedly ill. His temperature was 102 F. at the time of the examination. The patient eats heartily and sits around the house taking an interest in everything.

Agglutination tests—macroscopic method. *Bacillus typhosus*, 1-50, negative. *Micrococcus melitensis*, 1-50, positive in one hour. Normal control, negative.

CASE 5.—L. H., aged 35, is a goat ranchman whose family and personal history are unimportant. He became ill May 15, 1911, with headache, especially with pain at the back of his neck and general pains all over his body, which he called "rheumatism." The patient had some cough, a slight fever with a chilly feeling and some sweating. He came to Del Rio May 30, riding forty miles for treatment, in a carriage. When he was seen by Dr. Boren, his temperature was 103.5 F. He had slight tympanites, enlarged spleen and had to have medicine to move his bowels. He had one severe nose bleed. In four days the patient was clear of fever and returned home June 7 feeling well, except for weakness. June 11, the fever returned with pains all over his body, the ankles became swollen and painful and he had severe pains in both shoulders and in the back of the neck. The right testicle became swollen to three times its normal size. He then returned to Del Rio June 23 for treatment. Although always rather light in weight, he lost twenty-one pounds and is extremely emaciated. His anemia presented the blood-picture of a severe secondary type. No leukocytosis was present. The spleen is still enlarged and the bowels constipated. His appetite is good. The temperature now ranges from 99.5-101 F. He states that he has never drunk goats' milk, but that he has worked with his goats, feeding and herding them.

Agglutination tests—macroscopic method. *Bacillus typhosus*, 1-50, negative. *Micrococcus melitensis*, 1-50, positive in 15 minutes. Normal control, 1-20 and 1-50, negative.

A report from Major F. F. Russell, M.C., and Captain Charles F. Craig, M.C., of the Bacteriological Laboratory, Army Medical School, on the blood from Case 5 states that agglutinations were secured in dilutions up to 1-640; normal controls 1-20, negative.

It is possible that the goats of the Pecos River country, and doubtless along other sections of the border, are infected with the *Micrococcus melitensis*. The drinking of goats' milk in the Pecos River country is not common except among Mexicans and those located at isolated goat camps. Along some sections of the border I am told as much goats' milk is drunk as cows' milk, this being especially true for the Mexican population.

This endemic occurrence of Malta fever in Texas is now being further investigated by Lieut. Gentry and myself.

THE SURGICAL TREATMENT OF MEGACOLON *

WALLACE I. TERRY, M.D.
SAN FRANCISCO

The term "megacolon" is used to include the different forms of chronic dilatation of the colon, whether of congenital or acquired origin. Hirschsprung's disease includes only the congenital, and so far as we know, the idiopathic dilatations of the colon. As it has been impossible in the majority of the reported cases to determine, either at operation or autopsy, whether they were really congenital or acquired, it would seem best to describe them as cases of megacolon. The term "pseudomegacolon" is a misnomer, for if there is a megacolon at all, it can scarcely be called "pseudo."

The etiology of this condition is obscure. There are undoubted cases which show that it is often congenital, such as the cases of Konjetzny[1] in a fetus of seven months and in a child of three days, while the occurrence of cases in individuals from 50 to 88 years of age, would tend to put some of them in the category of acquired megacolon. In a fair proportion of the reported cases there has been obstruction of the bowel by tumors, by strictures, by kinks, by valve formations or by spastic contraction of the rectum or anus, but in the great majority of cases no such obstruction can be found. There are a number of theories to account for the latter group, among which are to be mentioned the following: Abnormal length of the mesosigmoid; abnormal length of the sigmoid; chronic colitis; neuropathic changes in the sympathetic system; and defective development of the muscular coats in some part of the colon. Indeed, it would seem, as Finney[2] and Schmidt[3] have stated, that no one theory yet advanced is a sufficient explanation of the etiology of all the cases.

Pathologically we find a number of interesting features in megacolon: great distention of the abdomen; thinning of the abdominal walls; increase in the length of the colon; dilatation of the colon even up to 10 inches in diameter; hypertrophy of the wall of the colon (in one case, reported by Finney, it was 3.55 cm. or 1⅜ inches, and others have reported a thickness of 2 to 3 cm.); and changes in the mesocolon, generally a hypertrophy. The sigmoid is more apt to be dilated than any other portion of the colon, and in a series of 104 cases analyzed by Puls, it was found that the sigmoid alone was the seat of the disease in 35 per cent., the entire colon was dilated in 27 per cent., and the sigmoid, either alone or with other segments, was involved in 84 per cent. of the cases. Occasionally coproliths of large size are present, as in one of the cases I am about to report.

In a small proportion of the cases a practical cure can be obtained by medical treatment, regulation of the diet, massage of the abdomen, irrigation of the colon and the proper use of laxatives and cathartics. The success of medical treatment will depend in large measure on the tonicity of the colon and the contraction of its lumen to normal or slightly above normal size. When, however, there is a definite obstruction which causes the dilatation, or medical treatment fails after a reasonable time, the condition becomes surgical and operation should not be delayed.

A few cases have been reported in which no further surgery than a dilatation of the rectum or a division of rectal valves was necessary to effect a cure; in others the removal of tumors pressing on the rectum has given good results.

The great majority of cases, however, require some direct interference with the dilated colon, and along these lines a number of different procedures have been advocated. The establishment of a fecal fistula, or an artificial anus, is advisable as a temporary expedient for acute obstruction or as a safety-valve in some of the more elaborate anastomoses or resections. Finney emphasizes the value of making a colostomy in healthy bowel above the dilated segment. As a curative measure it is scarcely justifiable, for few patients would tolerate it as a permanent proposition, unless all other means had failed to cure.

Colotomy with the removal of fecal tumors has been resorted to a number of times, when the masses have been too hard to break up without endangering the bowel. It is interesting to note that the presence of coproliths has often led to errors of diagnosis. In a case reported by Kraske, a segment of the colon con-

---

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Konjetzny: Deutsch. Ztschr. f. Chir., 1909, xcvii, 224; Beitr. z. klin. Chir., 1911, lxxiii, 155.

2. Finney: Surg., Gynec. and Obst., 1908, vi, 624. (Full bibliography.)

3. Schmidt: Beitr. z. klin. Chir., 1909, lxi, 682. (Full bibliography.)

taining a coprolith was resected in the belief that it was a true tumor. Puls[4] reports a case in which Delkeskamp removed a coprolith and immediately sutured the opening in the colon. Twenty months later another coprolith had formed and after removing it by a colotomy, he made an ileosigmoidostomy resulting in a cure.

Colopexy, either a high or a low fixation of the bowel, has proved of value in a few cases, but it would ordinarily be contra-indicated because of the bad effects of fixation of a mobile portion of the colon to the abdominal wall.

Coloplasty, based on the principle of pyloroplasty, has been done a few times without notable success.

Longitudinal plication has been done ten times with six successes and four failures. Bastianelli is credited with having first performed this operation and, so far as I am able to ascertain, it was next done in one of the cases I am about to report. I am inclined to believe that, like colopexy and coloplasty, it will not play any important part in the operative treatment of megacolon.

Exclusion of the bowel by various anastomoses is an important procedure and has been successfully used in many of the reported cases. The anastomoses to be made depend on the particular case, but as a rule an ileosigmoidostomy or a colocolostomy are the operations of choice. In a few cases, the anastomosis of ileum and sigmoid has led to severe diarrheal troubles, but the procedure is generally well tolerated. It has also been noted that the short-circuiting operations did not always prevent packing of the excluded bowel with fecal matter. Should, however, an entero-anastomosis fail to give a good result, it does not usually interfere with a resection of the remaining dilated colon.

Resection of the giant colon would seem to be the ideal operation. It is a more formidable procedure than any of the above-mentioned and should not be done as the primary operation in a fair proportion of the patients already much weakened by the effects of a megacolon. I believe, however, that more primary resections will be done in the future, now that we have learned better how to prevent and combat shock. Earlier diagnosis of the disease and further improvement in the technic of intestinal resection, will also be important factors in the successful treatment of megacolon.

The two cases which I desire to report seem to have been true cases of Hirschsprung's disease, generally designated in English literature as "congenital idiopathic dilatation of the colon." The first case is an unreported one of Dr. T. W. Huntington, and it is by his courtesy that I am putting it on record. The original case history was lost in the San Francisco fire of 1906.

Case 1.—Mrs. G., aged 28 years, with unimportant family history, had always been rather delicate and had suffered for many years from chronic constipation, from which she obtained relief by the daily use of enemas or cathartics. She came under the care of Dr. Huntington in the early part of 1901, complaining of a mass in the upper abdomen which had been noticed for two years and was gradually increasing in size. The mass was about 6 inches in diameter, was firm and very freely movable from side to side. The patient was seen by several other physicians, but the correct diagnosis of fecal tumor in a megacolon was not made until the operation. At the operation, in which I assisted Dr. Huntington, an enormous dilatation with thickening and lengthening of the entire colon was found. The hard fecal tumor was in the transverse colon, and by manipulation was broken up and later washed out through the rectum, there being no stricture of any kind in the bowel. Having in mind plication of the stomach for dilatation of that organ, I suggested a longitudinal plication of the colon, which was carried out by means of several rows of sutures. The patient recovered nicely from the operation and is now, ten years after the operation, perfectly well, although she has never obtained a weight above 115 pounds. The bowels are regular without artificial aid.

Case 2.—W. S., aged 20, male, single, good family history, had been feeble-minded since early childhood. Patient never had a natural bowel movement since birth, cathartics or enemas being always necessary, and the services of a physician being frequently required to secure relief. The abdomen had always been large and protruding. April 1, 1909, I was called in consultation by Dr. J. T. Gardner, who stated that the boy had not had a bowel movement for three weeks past and that despite the washing out of a large mass of impacted feces and repeated enemas, the marked distention of the abdomen persisted. Tympany was present all over the abdomen except in the right flank. The abdominal wall was thin, peristalsis visible and violent, and loud borborygmi frequently heard. On auscultation a metallic tinkle was heard over the lower abdomen and in the splenic region. No tumor mass was palpable. I made the diagnosis of megacolon and advised immediate operation on acount of the marked obstruction. At the operation, the same day, a median incision was made and there was found a megacolon involving principally the descending colon and sigmoid. The cecum was considerably larger than normal, while the sigmoid was 19 cm. (7½ inches) in diameter. The walls of the dilated bowel were much thicker than normal. Much fecal matter and gas was emptied out by means of rectal tubes, and a longitudinal plication was then performed by means of several rows of linen sutures. The abdominal wall was very thin, there being practically no panniculus adiposis, and the muscle fibers were widely separated. No satisfactory bowel movement could be obtained after this operation, and as the distention reappeared, the abdominal wound was torn asunder, permitting a loop of small intestine to protrude. An enterostomy was, therefore, made a week after the first operation, utilizing the protruding small intestine for that purpose. The patient now began to improve and four months later (Aug. 17, 1909) an attempt was made to close the artificial anus, in the belief that the colon had contracted, but the sutures failed to hold. On Sept. 3, 1909, an incision was made at the outer border of the right rectus, the ileum cut off and laterally implanted in the sigmoid. The artificial anus was found to be four feet from the termination of the ileum and was closed by a resection and a side-to-side anastomosis. It was found at this operation that the sigmoid was again dilated to its original size, but that the plication of the descending colon had been successful in reducing its caliber. The patient survived the last operation only six days and the cause of death could not be determined, an autopsy not being permitted.

In this second case, I feel that it was an error of judgment to perform a longitudinal plication at the first operation and that a primary colostomy in the cecum or colon, followed later by a resection of the dilated portion of the colon, would have been a better procedure.

I have been able to collect reports of 110 cases of megacolon treated surgically, with eighty-two recoveries and twenty-eight deaths: i. e., 74 per cent. and 26 per cent., respectively. Excluding fifteen cases in which nothing more than an exploratory laparotomy was done, we have ninety-five cases with seventy recoveries (73 per cent.) and twenty-five deaths (27 per cent.). The statistics of Loewenstein, made four years ago, showed a mortality of 48 per cent. out of forty-four cases subjected to operation. It would appear as though the death-rate had either decreased rapidly within the past few years, or else that proportionately more of the successful cases had been reported. The latest statistics regarding the medical treatment which I have been able to procure are those of Loewenstein in 1907, which show fifty-nine patients treated, with 34 per cent. recoveries and 66 per cent. deaths.

240 Stockton Street.

4. Puls: Beitr. z. klin. Chir., 1910, lxix, 306. (Full bibliography.)

ABSTRACT OF DISCUSSION

DR. J. F. PERCY, Galesburg, Ill.: I lost one of these patients just a few weks ago, and because the members of this Section are liable to have cases brought under their observation at any time, I think it is well to mention them in connection with the paper.

The patient was a farmer, aged 77; he had a history of what he and his family called dyspepsia, extending over the period really of his whole life; and the attacks of obstruction of the bowels, which were peculiar to this case, were always ushered in after a spell of intoxication. He was a periodical drinker. But he had always been relieved by the use of cathartics. When I saw him a few weeks ago he had been in bed two weeks, he had had 6 drops of croton oil, an unknown quantity of calomel, and a member of the family said he had been given 15 cents' worth of magnesium sulphate at one dose. Most of you can estimate the size of the dose. He was delirious, and the abdomen was moderately and equally distended. Pressure over any part of the abdomen elicited pain, but there was nothing that could be localized. I made an indefinite, tentative diagnosis of twist of the colon. I really did not know what I meant by that, but that was my diagnosis, and I gave a bad prognosis and advised that he be sent to the hospital, which was done.

On opening the abdomen it was found that it was entirely filled with the sigmoid and the descending colon. I made an inguinal colostomy rapidly and put the patient to bed. He died in about thirty-six hours. A feature of the case was the enormous amount of fecal matter, equaling a large water-pail full.

In the diagnosis before operation (and it was peculiarly true in this case) the important point is the history of years of suffering from intestinal pain, which in this instance had been relieved by enormous quantities of cathartics. The history along this line was really quite remarkable. But there came a time when cathartics did not relieve him.

MR. HAROLD J. STILES, Edinburgh, Scotland: I have met with this condition in the children's hospital in Edinburgh and also in my adult service. It is easy to diagnose in children, not only from the physical signs, but from the history which the mother will always give. The child is generally brought to the physician when it is a few years old, because of the obstinate constipation and the relatively enormous enlargement of the abdomen. The mother will tell you that the constipation has been obstinate ever since the child was born, and that it gets gradually worse and worse, and that the abdomen gets bigger and bigger. During this time there is a high degree of fecal obstruction. The bowels sometimes do not move for from two to three weeks, and then a copious and continuous diarrhea occurs with frequent intervals of colicky pains, as the previous speaker has said.

The best thing to do is to open the abdomen and anchor very securely this enormous colon to the abdominal wall, and then open the bowel at once, or a day or two afterward, as the urgency of the case may require. My experience is that some of these patients get along perfectly well with the simple colostomy. In the case of a boy aged 8, colostomy was done five or six years ago; all the distention is gone and the boy is perfectly well. There is only a little leakage when the child's bowels are loose, and the only inconvenience is the passage of wind through the opening, which relieves the tension and prevents the obstruction.

I have tried in a child of 3 the effect of doing a sigmoidectomy. Before the operation is done, care must be taken that the enormous sigmoid flexure and colon are thoroughly well emptied. If they cannot be emptied, preliminary sigmoidostomy should be made before the radical operation. In a little child the small intestine is no bigger than the finger, and the colon may be as large as the lower part of the thigh, and there is danger from the pressure of the large sac against the relatively thin small intestine. In the first case I was very anxious about the patient. For three or four days the child vomited continuously, but at last it got relief and recovered.

In elderly people, with a history of chronic constipation and intermittent obstruction for many years, here, again, the safest thing, I think, is preliminary colostomy. Then at the secondary operation I have done a resection of the sigmoid and as much of the large intestine as was necessary. In one case after doing this the symptoms recurred. Why? Because the distention extends right down to the rectum, and the whole of the sac cannot be resected. Several months after an end-to-end anastomosis it will be found that the same portion of the intestine is again greatly distended at the seat of operation. In that particular case, that of an elderly man, what I had to do was to make a small opening, and ultimately the patient was permanently relieved. There was very little leakage, but enough escape of gas to prevent the patient from getting obstruction.

DR. WALLACE I. TERRY, San Francisco: One point suggested by Professor Stiles' discussion is the use of the vermiform appendix as a permanent opening for the escape of gas. The appendicostomy should only be supplementary to some further operation on the megacolon.

THE USE OF SODIUM HYDROXID FOR STERILIZING INSTRUMENTS

ISAAC M. HELLER, M.D.
Adjunct Ophthalmologist and Otologist, Lebanon Hospital
NEW YORK

The profession is so busy along scientific lines that some practical points are often overlooked though their value may be unquestioned. Having for two years used sodium hydroxid (NaOH) in solution for sterilizing boilable instruments, with great satisfaction, I was somewhat surprised to find no mention thereof in books on operative surgery and gynecology. In looking over fifteen of the representative works, I find that in the majority it is advised to boil the instruments in "soda," or "washing soda," or "sodium carbonate" (Na_2CO_3), in strengths from .5 per cent. to 1.5 per cent. In one book sodium bicarbonate ($HNaCO_3$) is recommended. Instruments, especially if plated, boiled in such a solution come out covered with a white scum, are slippery and unless quickly dried, are liable to turn back, often defying diligent scouring. This is particularly true if there happen to be some blood thereon.

Sodium hydroxid, or hydrate, or caustic soda (NoOH), has none of these faults when used in a 0.25 per cent. solution. It comes in pearly sticks the caliber of a pencil and 4 to 6 inches long. A piece ¾-inch long (about 38 grains) to one quart of water gives the approximate strength. Inadvertently, I have left instruments standing in such a solution over night and have been agreeably surprised to find them neither black nor rusted in the morning. Fresh blood-stains disappear as if by magic when rinsed therein, and old dried spots are easily removed with a little rubbing. I have succeeded even in removing dried blood from rubber aprons with some of the solution left after sterilizing instruments, which had resisted previous scouring. It may be used hot and it is well known that plain hot water will clot and harden blood, making its removal the more difficult. It is my custom to have a basin of the solution handy while operating and by rinsing the instruments therein for a few seconds, they are kept always clean. While not able to prove this, I feel convinced that the instruments retain their plate longer and look brighter than before I used the hydrate.

Compared with sodium carbonate, the only disadvantage lies in the cost. The wholesale price of the hydrate is 35 to 40 cents per pound for the pure and about half that for the commercial product. The latter I have never used, so cannot say if it is equally serviceable. The chemically pure carbonate costs 25 cents, while the

common grade, full of impurities and extraneous substances, can be obtained in the grocery stores for 3 to 5 cents per pound. The amount used at any one time, however, is so small that the expense can be of little moment to any one, except, perhaps, in large hospitals where sterilization goes on more or less constantly. I am quite sure that the surgeon giving the hydroxid a fair trial will not care to return to the use of the carbonate or bicarbonate. Owing to its high degree of deliquescence, sodium hydroxid must be kept in tightly stoppered glass bottles, preferably wide-mouthed.

I claim no originality for this discovery, for Mr. H. Leiter, the instrument manufacturer of Vienna, brought it to my attention.

Another little "stunt" worthy of mention is to rub lightly those metal instruments to be left in the case for some time with a stick of cocoa butter so that a thin film is deposited. This has the advantage over petrolatum, so generally recommended, that it is not disagreeably greasy to the touch and shelves, does not attract and hold dust, while it is equally effective in preventing rust.

450 Tremont Avenue East.

PERFORATION OF PREGNANT UTERUS IN AN UNSUCCESSFUL ATTEMPT TO PRODUCE ABORTION

K. F. SNYDER, M.D.
FREEPORT, ILL.

The question of the amount of trauma to which the pregnant uterus may be subjected without aborting is one which frequently comes up before us in many phases, particularly as regards the matter of operating during the term of pregnancy. I report the following case as being unique, so far as I can find, in the amount of damage done to the uterus without producing a miscarriage.

July 11, 1910, I was called by Dr. A. F. Kober, of McConnell, Ill., to see with him a patient who was apparently aborting. The patient was a woman of 35; was flowing to moderate extent; temperature, 101; pulse, about 120; and a very rigid abdomen over the uterus. She had been sick about two days before calling Dr. Kober, and delayed assistance as long as she could.

She gave a history of having attempted to bring on a miscarriage by the introduction of a twig of slippery elm. She stated that she had frequently used this means of inducing her menses when over time and had never had any previous trouble with it.

Dr. P. J. Burrell, of Winslow, Ill., was called in, and under anesthesia the patient was more thoroughly examined by introducing a sound and it was then discovered that the posterior wall of the uterus had been perforated through the cervix. On this finding, the patient was immediately hurried to the hospital and the abdomen opened. We found an infected tract extending from the perforation in the uterus along the upper portion of the sigmoid, and lying among the walls of the small intestine a number of small abscesses with a localized peritonitis about. The omentum lay partially in the perforation in the posterior wall of the uterus, whose edges were necrotic, and was about 4 cm. in diameter. The abscesses were evacuated and carefully drained, the omentum was amputated and removed, and also drainage established through the perforation and the cervix to the vagina. Nothing was done with the uterus, as regards emptying, more because of the condition of the patient than because it was considered the best policy to pursue, though it did not occur to us at the time that the ovum might still be present.

After a moderately severe convalescence the woman recovered and came to good health, believing of course, that the attempt at abortion had been successful.

The patient was dismissed from my mind and service, and it was with great surprise that on Jan. 1, 1911, she came in and I found her pregnant about seven months, as I diagnosed it at that time. March 28, Dr. Kober delivered this woman of an 8-pound child after a labor of moderate severity, with no untoward incidence, showing that the woman was probably about six weeks pregnant at the time she attempted to bring on her miscarriage.

INSTRUMENT FOR PASSING A NEEDLE WHERE SPACE IS LIMITED

EVERETT MINGUS, M.D.
MARSHFIELD, ORE.

For the purpose of passing a needle and ligature where the space is limited, such as the back part of the mouth, the base of the bladder in suprapubic operations, or similar situations, I have devised the instrument shown below.

A thread semicircular needle is lodged in a semicircular overhanging guide at the bottom of the instrument; it is propelled forward by a radius arm and held in place by a compression spring and discharged through an eye in the forward end of the guide. The radius arm

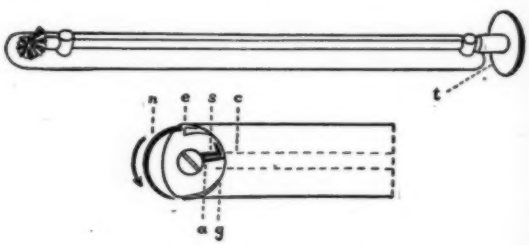


Diagram of instrument for passing a needle where space is limited.

is driven by a shaft connected with a right-angle cog movement on the back of the instrument. The cog movement is driven by a shaft connected with a milled head thumb-piece at the top of the instrument. The whole is mounted on a flat frame-piece and can be made any size to suit the necessities of the situation. In the diagram, *g* represents the guide; *a*, the driving arm; *s*, the spring; *e*, the eye in the forward end of the guide; *n*, the needle; *t*, the milled head thumb-piece; *c*, the shaft extending from the milled head to the cogs. The arrow to the left of the instrument shows the course the needle takes after leaving the instrument. The needle is engaged in the instrument by introducing the point into the eye of the guide, when the remainder falls readily into place with the butt end resting against the distal end of the driving-arm. Bringing the arm around 180 degrees, by turning the milled head, discharges the needle and causes it to pass through the remaining 180 degrees of the circle; it is now free from the instrument (*n*). If the driving arm is given a slight backward turn to prevent the thread from catching between the eye of the guide and the arm, the instrument is now withdrawn from the field of the operation, and the forward end of the needle is grasped with an ordinary needle-holder, and by a rotary motion in a manner to complete the circle. When the needle is placed in the holder, care should be taken to see that the thread is not entangled with the spring, otherwise there might be some difficulty

in getting the ligature to slip through the eye of the guide, when the instrument is withdrawn from the wound. The direction kept by the needle is on a plane with the instrument, and it passes through the tissue with much ease. Truax, Greene & Co., of Chicago, have made this instrument for me in a neat and well proportioned manner.

MICROSCOPIC DIAGNOSIS OF RABIES

A MODIFICATION OF VAN GIESON'S METHOD FOR STAINING THE CHARACTERISTIC NERVE CELL INCLUSIONS

S. B. MOON, M.D.
Director Pasteur Institute of Virginia; Associate Professor of Histology and Embryology, University College of Medicine
RICHMOND, VA.

For several years, in the laboratory of the Pasteur Institute of Virginia, a modification of Van Gieson's well-known method of staining for the diagnosis of rabies has been practiced. It consists essentially in the use of acetone as a solvent for rosanilin in the place of alcohol. When the solution of rosanilin in acetone is diluted with water, the stain yields itself so readily to the affinity of the cell inclusions that heat is unnecessary, as when alcohol is employed, and the inclusions are quickly tinted a brilliant rose-red color.

Furthermore, the stain may be very quickly prepared, should no fresh solution be at hand, rosanilin being extremely soluble in acetone. Nor is it necessary to wait till the solution becomes saturated, though it is preferable to keep such a solution on hand if the stain is used often. The concentrated solution is more stable than that in alcohol, and hence need not be freshly prepared so often. In our laboratory it is preserved in the ice-box, and keeps well in hot weather for a month or longer.

As in Van Gieson's original method, alcohol is used as a fixing agent, and methylene-blue for counterstaining. The modification makes no difference in the results obtained, a sharp contrast being presented between the rose-red cell inclusions, the orange-red blood-cells, etc. It is believed that the readiness of the acetone solution to give up the stain, enables one to detect the inclusions more certainly in brains of animals long dead, when post-mortem or other changes render them more difficult to color. This conclusion is based on practical comparative tests of the two methods.

The following technic is commonly employed in our laboratory:

Smears containing pyramidal cells of the hippocampus, or Purkinje cells of the cerebellum, are prepared in the usual manner, allowed to dry, and fixed for two minutes in ethyl or methyl alcohol. They are then dried with blotting-paper and stained.

Two or three drops of a saturated solution of rosanilin in acetone (U. S. P.) are added to 10 c.c. of water, which is agitated with the pipette, and soon becomes a brilliant rose-red color. Then two drops of a half-saturated aqueous solution of methylene-blue are added, and the stain is applied to the smears.

Staining is completed in one or two minutes, without heat. The slide is then washed under the tap, dried, and examined.

Should a weaker than saturated solution of rosanilin be employed, it is only necessary to add more of it, drop by drop, to the water, till the usual brilliant rose-red tint is obtained, when the result will be found about the same as that obtained with the saturated solution.

AQUEOUS SOLUTION OF IODIN IN THE TREATMENT OF ULCER OF THE CORNEA

A PRELIMINARY NOTE

E. L. MEIERHOF, M.D.
NEW YORK

At the New York Eye and Ear Infirmary we have for a number of years been using, as a routine measure in the treatment of ulcers of the cornea, a solution of mercury bichlorid with a fair amount of success, the patient instilling three to five drops three times daily, and in addition using an ointment of mercury bichlorid once or twice daily. Occasionally a 20 or 25 per cent. solution of argyrol is used in the early stages of the ulcer, especially where the secretion has a tendency to be mucopurulent. In the Morax-Axenfeld infection, with an erosion of the cornea, zinc sulphate is employed. Occasionally phenol (carbolic acid), or other forms of cauterizing, are employed when the ulcer has a tendency to be deep or is spreading. I have also followed practically the same routine in my private practice, but have not been entirely satisfied with it, in spite of additional measures, such as warm bathing, dionin, atropin, etc., except in cases in which syphilis was the principal factor.

Some six months ago, however, I commenced using a watery solution of iodin in these cases, being influenced to do so by the wonderful effect of tincture of iodin in sterilizing raw catgut. The use of iodin in infected lesions of the cornea is not new, but the method heretofore employed was not satisfactory. It was generally used by occasionally touching an ulcer with tincture of iodin, which is extremely painful unless cocain is first employed; and this is sometimes undesirable on account of the desiccating influence of cocain on the corneal epithelium, diminishing the resistance of the corneal tissue to further infection. (Holocain, however, does not have this influence.) I had already used iodin locally in other conditions and obtained very satisfactory results.

The patients suffering from ulcer of the cornea were treated with a solution of iodin 1 grain, sodium iodid 3 grains, and 1 ounce of water. Three drops of this solution were ordered to be instilled into the eye, three or four times daily. No other treatment was used. The cases treated were largely superficial erosions; five of them were ulcers in connection with trachomatous pannus, and several had been previously treated. The instillation of the above mentioned solution of iodin is not very painful, and the duration of the pain is not more than ten or fifteen minutes. Occasionally the conjunctiva becomes congested from its use, but this disappears when the application is stopped. After twenty-four or forty-eight hours of this treatment, the patient will tell you that his eye is less painful and more tolerant to light, and the headache, so common in these cases, diminishes rapidly. The solution can be used for several weeks without causing any further annoyance, even if the ulcer is healed. Altogether, I have treated fifteen patients by this method, and I have been so encouraged by the results that without waiting for the accumulation of further experience I take the liberty of offering it as an addition of great utility to our ocular therapeutics.

1140 Madison Avenue.

Special Article

NINTH ANNUAL SUMMARY OF FOURTH OF JULY INJURIES

For the ninth consecutive year THE JOURNAL this week presents statistics of injuries received during the celebration of the Fourth of July, with particular reference to tetanus resulting from these injuries. Special effort has been made to secure reliable data and all serious cases have been carefully investigated, so that, so far as the statistics go, dependence may be placed on them. In addition to the usual reports, blanks were sent to a large number of hospitals and thousands of letters were sent to health officers and physicians in all parts of the country asking for reports. In fact, unusual effort was made this year to obtain full and complete returns.

In previous years from the hospitals long lists of injured were received, but this year a large majority reported none injured and those which did report cases had comparatively small lists. The reduction in the number of casualties this year was very marked. Our thanks are due to health officers, hospital superintendents, physicians and others for the careful reports which have made these statistics practically complete and the figures reliable. The data are presented in the same manner as heretofore so that comparisons with the figures of previous years may be made.

SANITY VS. GUNPOWDER —By De Mar
[Courtesy of *Philadelphia Record.*]

FEWER CASES OF TETANUS THIS YEAR

There were only eighteen cases of tetanus this year, fifty-four less than last year, and the lowest number reported during the nine years THE JOURNAL has been gathering these statistics. Last year there were seventy-two cases, and 150 in 1909. It is a significant fact that the number of blank cartridge wounds shows a correspondingly large decrease, from 450 last year to 169 this year (Table 6). The most common cause of the wound is the blank cartridge, and the most common site is the hand. Of the twenty lockjaw patients all but one were males, and all but three were under 18 years of age. The youngest was 4 years old, the oldest was 40, and the average age this year was 14 years.

The duration given in the table is the number of days between the time of the injury and death or recovery. Figures are also given (in parentheses) showing the number of days following the injury before active symptoms appeared. This was five to fifteen days, the average for fatal cases this year being about eight days. A longer incubation period probably indicates a less virulent infection and, therefore, a better chance for recovery under treatment. Following the appearance of the symptoms, death resulted in from two to three days; the average of all cases this year, for which this information was given, was two and one-third days. In only one case was the entire time between inoculation and death less than five days, the duration of this case being four days. The average duration for all fatal cases reported was about nine days.

USE OF ANTITOXIN

So far as reports were received tetanus antitoxin was employed in seven of the eighteen cases reported this year, but in no instance, according to the reports, was it employed until after the active symptoms had set in. This is unfortunate, as tetanus antitoxin is so valuable as a prophylactic that very few cases have ever been reported in which active symptoms began after its administration. The list of tetanus cases is given in Table 1.

DISTRIBUTION OF TETANUS

Tetanus occurred in ten states this year, seven less than last year, fourteen less than in 1909, and nine less than in 1908. Three cases each were reported for Illinois and Ohio, and two each for California, Michigan, New Jersey and Wisconsin. Four states, Iowa, Massachusetts, New York and Pennsylvania had one case each. The greatest reduction below last year's record was in Pennsylvania which had 10 cases less than last year followed by Michigan with nine cases less than last year. Illinois had eight cases less and New Jersey seven less. Table 2 allows comparison of the number of cases in each state for the nine years.

THE DEADLY BLANK CARTRIDGE

Blank cartridges continue to be responsible for the great majority of tetanus cases, 15 or 83 per cent. this year being due to that cause as compared with 88.9 per cent. last year, and 86.5 per cent. in 1909. With the full knowledge of the awfulness of the deaths caused by blank cartridge wounds it is certainly inexcusable that the use of these instruments of torture is not absolutely prohibited. Two cases of tetanus this year were due to injuries by fire-crackers and one by a bomb. The causes of the tetanus cases from Fourth of July injuries for each of the past nine years are shown in Table 3.

TABLE 1.—CASES OF TETANUS

Name.	Sex.	Age.	Cause of Wound.	Site of Wound.	Duration in Days*	Day Antitoxin was used.	Termination.
CALIFORNIA							
Domato	M.	14	Bl. ctg.	Hand.	8	..	D.
O'Brien	M.	12	Bl. ctg.	Hand. (8)	10	8	D.
ILLINOIS							
Bisso	M.	14	Bl. ctg.	Hand.	7	No	D.
Garrett	M.	14	Bl. ctg.	Hand. (7)	20	8	R.
Heligas	M.	9	Bl. ctg.	Hand. (5)	8	5	D.
IOWA							
Porter	M.	15	Bl. ctg.	Leg.	7	..	D.
MASSACHUSETTS							
Alexands	M.	18	Bl. ctg.	Hand.	12	..	...
MICHIGAN							
McCracken	M.	4	Bomb.	(10)		..	...
Perkins	M.	8	Bl. ctg.	Hand. (9)	11	9	D.
NEW JERSEY							
Morris	M.	11	Bl. ctg.	Hand. (6)	8	..	D.
Murphy	M.	13	Bl. ctg.	Hand. (10)		..	...
NEW YORK							
Anesi	M.	11	Bl. ctg.	Hand. (6)	8	6	D.
OHIO							
Bridwell	M.	8	Bl. ctg.	Hand.	..	..	...
Knowlton	M.	15	Bl. ctg.	Hand.	11	..	...
Malone	M.	40	Firecracker	Hand.	4	..	D.
PHILADELPHIA							
Strain	M.	24	Bl. ctg.	Hand. (0)		0	R.
WISCONSIN							
Churchill	M.	10	Firecracker	Hand. (7)		..	...
Schmidt	M.	12	Bl. ctg.	Hand. (15)	18	..	D.

* Figures in parentheses show incubation period.

TABLE 2.—TETANUS CASES BY STATES
Comparison with Previous Years

	1903	1904	1905	1906	1907	1908	1909	1910	1911
Alabama	..	..	1	..	..	..	..	..	..
Arizona	..	..	..	..	1	..	..	..	..
California	2	4	4	3	1	..	2	1	2
Colorado	4	..	1	..	..	..	..	..	..
Connecticut	3	..	3	..	4	1	..	..	..
Delaware	..	..	1	1	1	..	2	..	..
Dist. of Columbia	1	..	..	..	..	..	..	..	..
Florida	..	..	..	..	..	..	1	..	..
Georgia	..	..	..	..	1	..	..	..	..
Idaho	1	..	..	..	..	..	1	..	..
Illinois	49	15	20	16	12	12	20	10	3
Indiana	11	6	3	8	2	..	9	6	..
Iowa	14	2	3	4	4	1	1	1	1
Kansas	11	1	..	..	2	1	6	..	..
Kentucky	4	2	..	1	..	1	1	..	..
Louisiana	..	..	..	..	..	..	..	..	..
Maine	2	4	1	1	..	1	1	1	..
Maryland	1	..	1	1	..	..	2	2	..
Massachusetts	10	5	7	3	2	5	8	..	1
Michigan	29	7	9	4	4	2	11	11	2
Minnesota	15	2	2	2	2	..	..	..	..
Missouri	29	1	3	3	1	5	8	2	..
Montana	2	1	1	..	1	..	3	2	..
Nebraska	4	3	3	1	..	1	3	1	..
New Hampshire	2	..	..	1	..	..	1	..	..
New Jersey	8	9	3	10	8	10	19	9	2
New York	36	9	6	8	4	9	11	7	1
North Dakota	..	..	..	..	..	..	..	..	..
Ohio	67	9	5	7	6	7	12	3	3
Oklahoma	1	..	1	1	..	1	..	1	..
Oregon	2	..	..	1	1	1	..	..	..
Pennsylvania	82	17	12	5	7	7	10	11	1
Rhode Island	3	..	..	1	..	..	..	..	..
South Carolina	..	..	..	..	..	..	..	..	..
South Dakota	..	..	..	..	..	1	1	..	..
Tennessee	..	..	..	..	..	..	..	..	..
Texas	..	..	..	..	2	..	..	..	..
Utah	..	1	1	..	..	..	..	1	..
Vermont	2	2	..	2	2	..	..	..	..
Washington	2	2	..	..	2	4	4	1	..
West Virginia	3	..	..	2	..	1	4	..	..
Wisconsin	10	4	13	2	3	5	9	3	2
Wyoming	..	..	..	1	..	..	..	..	..
Total	415	165	164	89	73	78	150	72	18
No. states having cases	30	21	22	25	22	20	25	18	10

THE MORTALITY PERCENT.

Of the eighteen cases of tetanus from Fourth of July injuries this year ten, or 55 per cent., ended fatally as compared with 93 per cent. last year, 84 per cent. in 1909, and 72 per cent. in 1908.

TETANUS FROM INJURIES NOT CAUSED BY FIREWORKS

Besides the cases of lockjaw due directly to the use of fireworks, it is interesting to note also those occurring during the Fourth of July season which were due to penetrating wounds from other causes, such as nails or splinters, to crushing injuries, etc. There was likewise a marked reduction in these cases, only twenty-nine being reported during the Fourth of July season this year, or less than half the number of last year, when forty-seven were reported. Is this reduction due to the prophylactic use of tetanus antitoxin? The cases of tetanus due to other than Fourth of July injuries are shown by states in Table 4. A comparison of this table with Table 2 is interesting.

TABLE 3.—CAUSES OF TETANUS CASES

Year.	Blank Cartridge.	Giant Cracker.	Cannon.	Fire-arms.	Powder, etc.	Total.
1903	263	17	5	3	27	415
1904	74	18	5	1	7	105
1905	65	17	4	5	13	104
1906	54	17	1	7	10	89
1907	52	8	6	4	3	73
1908	58	5	4	3	6	150
1909	130	9	1	4	6	150
1910	64	2	..	5	1	72
1911	15	1	1	..	1	18

TABLE 4.—CASES OF TETANUS FROM OTHER CAUSES

	1908	1909	1910	1911		1908	1909	1910	1911
Alabama	..	..	1	1	Nevada	..	..	..	..
Arizona	..	..	..	..	New Hampshire	..	..	..	..
Arkansas	2	..	..	..	New Jersey	7	8	8	1
California	4	4	1	2	New Mexico	..	1	..	..
Colorado	3	..	..	1	New York	17	12	4	2
Connecticut	2	2	..	..	North Carolina	1	..	..	..
Delaware	2	1	..	..	North Dakota	1	..	..	..
Dist. of Colum.	..	..	..	..	Ohio	23	13	2	..
Florida	2	..	..	..	Oklahoma	..	..	..	..
Georgia	..	1	..	..	Oregon	..	1	3	..
Idaho	..	..	..	..	Pennsylvania	21	21	8	6
Illinois	17	18	7	6	Rhode Island	..	1	..	..
Indiana	6	4	1	2	South Carolina	..	..	..	..
Iowa	2	7	3	1	South Dakota	2	2	..	..
Kansas	4	..	1	..	Tennessee	3	..	..	..
Kentucky	5	5	..	1	Texas	4	1	1	..
Louisiana	1	..	..	1	Utah	..	..	..	..
Maine	..	..	..	..	Vermont	..	..	1	..
Maryland	3	..	2	1	Virginia	4	1	..	1
Massachusetts	3	5	1	..	Washington	2	..	..	..
Michigan	4	5	1	..	West Virginia	..	1	..	..
Minnesota	4	2	..	..	Wisconsin	5	4	1	..
Mississippi	..	..	..	..	Wyoming	..	..	..	..
Missouri	12	5	1	2					
Montana	..	..	..	..	Total	166	28	47	29
Nebraska	..	3	1	1	States reporting cases	29	25	18	15

DEATHS AND INJURIES NOT CAUSED BY TETANUS

Beside the ten deaths due to tetanus, forty-seven persons were killed by various forms of fireworks, making a total of fifty-seven deaths, seventy-four less than last year, and 158 less than in 1909. This is the lowest number of deaths from such causes during the nine years covered by THE JOURNAL'S statistics, and shows a very decided improvement over previous years. This year eleven people were killed outright by firearms, nine by explosions of powder, bombs or torpedoes, five by cannon, two by giant firecrackers and eight by various causes, as blood poisoning, explosions of chemicals, etc. The largest number of deaths due to any one cause was twelve, mostly little girls, who were burned to death by

fire from fireworks, in several instances from the so-called "harmless" varieties, including very small firecrackers and sparklers. All accidents not due directly to the discharge or handling of fireworks or other means of noise production and display on or about the Fourth of July have been omitted. Table 5 shows a comparison of the causes of death aside from tetanus for the past seven years.

TABLE 5.—CAUSES OF DEATHS NOT DUE TO TETANUS

Year.	Gunshot.	Fire from Fireworks.	Powder, Torpedoes, Etc.	Giant Crackers.	Cannon.	Other Causes.	Total
1905	37	23	6	5	7	17	95
1906	38	18	18	3	3	3	83
1907	20	31	13	13	3	22	102
1908	30	22	19	23	7	7	108
1909	17	37	16	7	7	6	90
1910	19	26	11	2	3	3	64
1911	11	12	9	2	5	8	47

DISTRIBUTION OF INJURIES

In Table 6 will be found a summary of all injuries including tetanus and of all causes arranged by states. Beneath the totals at the bottom are given, for comparison, the totals for the eight previous years. The grand totals for the nine years are also given. Table 7 allows of comparisons of the total deaths and accidents for nine years. The decrease in the number of injuries is most remarkable this year and unquestionably is the result of the efforts to secure more intelligent methods of celebration. This is evident from the fact that the most marked decreases are in the states where the agitation for restrictive measures was strongest. Massachusetts this year had less than one-half of the injuries it had last year and only one-sixteenth of what it had in 1909. Connecticut reduced its total to less than one-fifth and Minnesota and New Jersey reduced their totals to one-fourth what they were in 1909. Other states showing marked reductions are Indiana, Iowa and Michigan.

TABLE 6.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES

Number.	States.	Deaths.			Injuries.						Total Persons Dead or Injured.	Causes of Tetanus Cases.		Causes of all Cases Aside from Tetanus Cases.				
		From Tetanus.	From Other Causes.	Total.	Loss of Sight.	Loss of One Eye.	Loss of Legs, Arms or Hands.	Loss of Fingers, One or More.	Other Injuries.	Total Non-Fatal Injuries.		Blank Cartridge.	All Other Causes.	Blank Cartridge.	Fire Crackers.	Cannon.	Firearms.	Powder and Fireworks.	Number.
1	Alabama	.....	.....	.....	.....	.....	.....	1	2	3	3	.....	.....	.....	.....	.....	.....	3	1
2	Arizona	.....	.....	.....	.....	.....	.....	.....	2	2	2	.....	.....	.....	.....	.....	.....	2	2
3	Arkansas	.....	.....	.....	.....	.....	.....	1	.....	1	1	.....	.....	.....	.....	.....	.....	1	3
4	California	2	2	4	1	1	.....	2	35	39	43	2	.....	8	5	4	5	19	4
5	Colorado	.....	.....	.....	.....	.....	.....	1	5	6	6	.....	.....	.....	2	.....	.....	4	5
6	Connecticut	.....	1	1	.....	1	1	1	11	14	15	.....	.....	3	6	.....	5	1	6
7	Delaware	.....	.....	.....	.....	.....	.....	.....	3	3	3	.....	.....	.....	3	.....	.....	.....	7
8	District of Columbia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
9	Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
10	Georgia	.....	.....	.....	.....	.....	.....	.....	19	10	10	.....	.....	.....	.....	.....	.....	10	10
11	Idaho	.....	.....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	1	11
12	Illinois	2	10	12	.....	1	4	11	190	206	218	3	.....	45	50	14	36	70	12
13	Indiana	.....	2	2	.....	1	3	.....	47	51	53	.....	.....	7	18	7	5	16	13
14	Iowa	1	4	5	1	.....	.....	2	46	49	54	1	.....	5	29	4	4	11	14
15	Kansas	.....	2	2	1	.....	.....	1	21	23	25	.....	.....	5	4	1	4	11	15
16	Kentucky	.....	1	1	.....	.....	.....	.....	5	5	6	.....	.....	1	1	3	.....	1	16
17	Louisiana	.....	.....	.....	.....	.....	.....	.....	2	2	2	.....	.....	.....	1	.....	.....	1	17
18	Maine	.....	1	1	.....	.....	1	.....	2	3	4	.....	.....	.....	2	1	.....	1	18
19	Maryland	.....	1	1	.....	.....	1	1	10	12	13	.....	.....	1	2	4	2	4	19
20	Massachusetts	.....	2	2	.....	.....	3	1	21	25	27	1	.....	.....	6	2	1	17	20
21	Michigan	1	2	3	1	4	3	4	54	66	69	1	1	3	12	7	7	38	21
22	Minnesota	.....	.....	.....	.....	1	.....	2	14	17	17	.....	.....	1	4	3	2	7	22
23	Mississippi	.....	.....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	.....	23
24	Missouri	.....	.....	.....	.....	2	1	4	53	60	60	.....	.....	8	14	5	5	28	24
25	Montana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
26	Nebraska	.....	.....	.....	.....	3	.....	1	13	17	17	.....	.....	.....	8	1	.....	8	26
27	Nevada	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27
28	New Hampshire	.....	1	1	.....	.....	.....	.....	1	1	2	.....	.....	.....	.....	2	.....	.....	28
29	New Jersey	1	2	3	.....	.....	1	3	36	40	43	2	.....	4	9	7	9	12	29
30	New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
31	New York	1	5	6	1	3	3	11	213	231	237	1	.....	40	60	15	58	63	31
32	North Carolina	.....	.....	.....	.....	.....	.....	1	4	5	5	.....	.....	.....	.....	4	.....	1	32
33	North Dakota	.....	.....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	1	.....	.....	.....	33
34	Ohio	1	.....	1	.....	2	.....	5	97	104	105	2	1	7	44	8	9	34	34
35	Oklahoma	.....	.....	.....	.....	.....	.....	.....	9	9	9	.....	.....	3	2	.....	.....	4	35
36	Oregon	.....	.....	.....	.....	.....	.....	.....	3	3	3	.....	.....	.....	2	.....	.....	1	36
37	Pennsylvania	.....	4	4	1	7	8	21	401	438	442	1	.....	21	140	18	27	235	37
38	Rhode Island	.....	1	1	.....	.....	.....	.....	10	10	11	.....	.....	2	4	.....	1	4	38
39	South Carolina	.....	1	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	39
40	South Dakota	.....	.....	.....	.....	.....	.....	.....	2	2	2	.....	.....	.....	1	.....	.....	1	40
41	Tennessee	.....	.....	.....	.....	.....	.....	1	2	3	3	.....	.....	1	.....	.....	1	1	41
42	Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	42
43	Utah	.....	.....	.....	.....	.....	.....	.....	2	2	2	.....	.....	.....	1	.....	.....	1	43
44	Vermont	.....	.....	.....	.....	.....	.....	2	2	4	4	.....	.....	1	2	1	.....	.....	44
45	Virginia	.....	.....	.....	.....	.....	.....	2	1	3	3	.....	.....	.....	2	.....	.....	1	45
46	Washington	.....	1	1	1	.....	.....	1	19	21	22	.....	.....	2	15	.....	.....	5	46
47	West Virginia	.....	.....	.....	.....	.....	.....	.....	2	2	2	.....	.....	.....	2	.....	.....	.....	47
48	Wisconsin	1	4	5	1	.....	1	3	42	47	52	1	1	2	29	3	2	14	48
49	Wyoming	.....	.....	.....	.....	.....	.....	.....	4	4	4	.....	.....	.....	2	.....	1	1	49
	1911 totals	10	47	57	8	26	30	83	1,309	1,546	1,603	15	3	170	484	114	184	633	
	1910 totals	67	64	131	7	33	26	114	2,612	2,792	2,923	64	8	386	1,050	212	229	974	
	1909 totals	125	90	215	16	36	41	176	4,823	5,092	5,307	130	20	1,095	1,614	427	341	1,680	
	1908 totals	55	108	163	11	93	57	184	5,115	5,460	5,623	58	18	816	1,793	399	481	2,058	
	1907 totals	62	102	164	12	75	57	237	3,808	4,249	4,413	52	21	554	1,489	267	502	1,528	
	1906 totals	75	83	158	22	72	56	227	4,931	5,308	5,466	54	35	925	1,690	408	532	1,822	
	1905 totals	87	95	182	25	106	80	221	4,562	4,994	5,176	65	39	744	1,775	404	404	1,675	
	1904 totals	91	60	466	10	75	54	208	3,637	3,986	4,169	74	25	831	1,268	508	406	1,057	
	1903 totals	406	60	466	10	75	54	174	3,670	3,983	4,449	363	29	1,309	1,152	397	236	963	
	Total for nine years	978	741	1,719	130	577	462	1,624	34,617	37,410	39,129	875	198	6,830	12,315	3,206	3,315	12,300	

Pennsylvania has had the largest number each year since 1904, having 442 casualties this year, followed by New York with 237, and Illinois with 217. Note that two years ago the same three states had respectively 986, 897 and 546 injuries. Altogether there were 1,603 injuries this year, a little more than half of last year's record and less than one-third of the totals for 1909.

NATURE OF NON-FATAL INJURIES

There were 1,546 non-fatal injuries this year, a little more than half (55 per cent.) of the total reported last year. Eight persons were totally blinded this year, twenty-six lost one eye each, thirty lost legs, arms or hands, and eighty-three lost one or more fingers. Considering the marked reduction in the total number injured it is surprising to note that the totals of these more severe injuries are about the same as reported last year. The giant firecracker continues to hold the first place as a cause of mutilating wounds and is responsible for most of the losses of eye, hands and fingers. This year 483 injuries including two deaths and two cases of lockjaw were due to the giant firecracker. Firearms caused 184 accidents this year including eleven killed. Of the total number thus injured, eighty were struck by stray bullets from the reckless use of firearms by others, and six deaths resulted. The use of the toy cannon caused 114 injuries including five killed, but this year caused no cases of tetanus. In the nine years a total of 39,129 people—the equivalent of over thirty-nine regiments—were killed or injured in the celebration of the Fourth of July!

TABLE 7.—TOTAL DEATHS AND ACCIDENTS BY STATES DURING NINE YEARS

	1903	1904	1905	1906	1907	1908	1909	1910	1911
Alabama	2	7	1	2	1	1	1	3	3
Arizona	1	.....	4	5	2	5	3	.....	2
Arkansas	.....	.....	3	4	.....	5	1	4	1
California	100	138	142	96	121	136	80	62	42
Colorado	39	44	26	23	25	13	18	19	6
Connecticut	162	133	132	160	61	105	86	78	15
Delaware	1	5	14	8	16	12	13	8	3
Dist. Columbia	2	10	24	5	12	21	.....	.....	.....
Florida	1	2	2	.....	.....	.....	1	4	.....
Georgia	.....	.....	.....	4	2	4	.....	5	10
Idaho	4	4	3	3	4	4	2	3	1
Illinois	366	423	542	508	468	558	546	285	218
Indiana	160	211	217	250	.....	255	164	167	53
Iowa	168	137	328	255	231	174	91	141	54
Kansas	63	88	56	61	64	72	86	50	25
Kentucky	30	72	17	21	18	33	17	26	6
Louisiana	.....	2	3	7	8	4	.....	4	2
Maine	31	32	29	15	11	16	22	7	4
Maryland	21	22	13	10	23	21	10	8	13
Massachusetts	637	193	467	329	168	430	430	63	27
Michigan	144	157	288	193	163	203	177	143	60
Minnesota	157	102	174	95	95	65	69	64	17
Mississippi	.....	.....	.....	2	2	1	.....	.....	1
Missouri	147	84	218	325	290	375	352	112	60
Montana	5	17	40	3	6	11	9	10	.....
Nebraska	46	63	43	47	58	46	42	36	17
Nevada	.....	1	2	.....	1	4	.....	1	.....
New Hampshire	37	23	9	20	13	13	22	10	2
New Jersey	238	204	350	308	402	473	488	167	45
New Mexico	.....	4	5	1	6	.....	1	3	.....
New York	522	549	546	681	752	647	897	327	237
North Carolina	.....	.....	1	1	.....	.....	.....	1	5
North Dakota	10	8	29	11	8	13	4	13	1
Ohio	443	337	359	460	375	543	322	166	105
Oklahoma	1	3	7	14	194	9	12	11	9
Oregon	16	13	9	11	5	9	21	19	3
Pennsylvania	553	744	721	909	491	987	986	623	442
Rhode Island	64	30	11	21	39	20	42	19	11
South Carolina	.....	.....	.....	1	.....	.....	4	.....	1
South Dakota	4	10	15	5	8	10	9	4	2
Tennessee	4	1	5	6	4	5	4	16	3
Texas	2	2	4	11	7	11	4	2	.....
Utah	22	22	25	18	20	12	18	6	2
Vermont	45	14	10	14	18	19	12	4	4
Virginia	.....	11	5	8	.....	5	4	.....	3
Washington	21	25	15	25	23	38	32	37	22
West Virginia	19	16	34	64	27	29	35	20	*2
Wisconsin	100	215	220	155	150	187	157	171	82
Wyoming	1	2	8	3	.....	1	1	4	4
Totals	4449	4169	5176	5469	4413	5823	5307	2923	1603

TABLE 8.—NUMBER REPORTED KILLED AND INJURED IN THE LARGER CITIES

City.	Population Census of 1910.	1907		1908		1909		1910		1911	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New York City	4,776,883	22	422	11	316	7	539	6	179	3	91
Chicago	2,185,283	16	151	12	202	...	118	4	62	2	53
Philadelphia	1,549,008	7	248	6	426	9	508	4	406	...	294
St. Louis	687,029	3	189	4	279	4	163	...	44	...	38
Boston	670,585	3	59	6	199	5	167	...	35	...	3
Cleveland	560,663	3	63	12	93	...	4	...	1	...	5
Baltimore	558,485	...	5	1	10	...	5	...	6	...	10
Pittsburgh	553,905	10	88	...	30	5	48	6	26	1	25
Detroit	465,766	2	46	...	10	2	46	1	17	...	18
Buffalo	423,715	...	18	3	11	...	33	1	13	...	16
San Francisco	416,912	...	...	...	11	...	12	...	9	1	8
Milwaukee	373,857	2	93	...	70	...	78	3	112	1	19
Cincinnati	364,463	2	80	1	112	3	86	3	49	1	4
Newark, N. J.	347,469	1	129	2	81	1	159	1	15	...	...
New Orleans, La.	339,075	...	8	...	4	...	...	...	3	...	2
Washington, D. C.	331,069	...	12	...	21	...	...	...	...	...	...
Los Angeles, Cal.	319,198	...	35	...	40	...	28	...	...	...	4
Minneapolis, Minn.	301,408	...	13	...	10	1	24	...	20	...	...
Jersey City, N. J.	267,779	...	31	5	34	1	14	1	44	...	14
Kansas City, Mo.	248,381	1	46	...	55	4	67	1	25	...	4
Seattle, Wash.	237,194	1	3	...	11	3	10	...	7	...	...
Indianapolis, Ind.	233,650	1	31	1	14	1	33	...	24	...	5
Providence, R. I.	224,326	...	20	1	21	...	13	...	10	1	9
Louisville, Ky.	223,928	...	13	...	10	1	10	1	13	...	3
Rochester, N. Y.	218,149	...	12	...	10	...	5	...	10	...	4
St. Paul, Minn.	214,744	...	20	...	13	...	18	...	12	...	10
Denver, Colo.	213,381	...	8	...	13	...	12	1	6	...	2
Portland, Ore.	207,214	...	2	...	3	...	14	...	17	...	1
Columbus, Ohio	181,548	5	36	...	5	1	11	...	...	...	1
Toledo, Ohio	168,497	1	5	...	8	2	7	1	2	...	2
Atlanta, Ga.	154,839	1	4	...	3	...	...	...	5	...	10
Oakland, Cal.	150,174	...	9	...	...	...	2	...	6	...	1
Worcester, Mass.	145,986	1	6	2	20	1	47	...	6	...	1
Syracuse, N. Y.	137,249	...	20	...	14	...	13	...	6	...	1
New Haven, Conn.	133,605	...	2	...	...	...	15	...	...	...	1
Birmingham, Ala.	132,685	...	...	...	...	...	...	...	...	...	3
Memphis, Tenn.	131,105	...	1	...	3	...	4	...	2	...	...
Scranton, Pa.	129,867	...	5	1	17	1	28	...	6	...	10
Richmond, Va.	127,628	...	...	...	...	1	1	...	...	...	...
Paterson, N. J.	125,600	1	29	2	31	1	45	1	14	...	5
Omaha, Neb.	124,096	...	25	...	10	1	17	...	17	...	7
Fall River, Mass.	119,295	...	...	...	12	...	19	...	1	...	...
Dayton, Ohio	116,577	...	11	...	14	...	4	...	2	...	4
Grand Rapids, Mich.	112,571	...	20	1	39	...	3	...	17	1	6
Nashville, Tenn.	110,364	...	2	...	...	...	...	...	8	...	2
Lowell, Mass.	106,294	...	23	...	...	...	18	...	...	1	3
Cambridge, Mass.	104,839	...	...	...	17	...	...	...	...	...	4
Spokane, Wash.	104,402	...	...	...	...	...	...	...	...	...	7
Bridgeport, Conn.	102,054	...	1	...	27	...	21	...	4	...	4
Albany, N. Y.	100,253	1	24	...	37	...	31	...	11	1	5
Hartford, Conn.	98,915	...	18	...	16	...	11	...	14	...	1
Trenton, N. J.	98,815	...	38	1	17	1	58	...	...	...	1
New Bedford, Mass.	96,652	...	...	...	3	...	...	...	...	...	...
Reading, Pa.	96,071	...	17	...	13	...	17	1	3	...	4
San Antonio, Texas	96,614	...	...	...	1	...	...	...	...	...	...
Camden, N. J.	94,538	...	10	...	29	4	14	...	6	...	...
Salt Lake City	92,777	...	15	...	6	2	14	1	4	...	...
Lynn, Mass.	89,336	...	3	...	11	3	16	...	4	...	...
Springfield, Mass.	88,926	...	21	1	36	1	9	1	2	...	4
Wilmington, Del.	87,411	1	14	...	13	3	9	...	6	...	3
Des Moines, Iowa	86,368	1	31	...	41	...	13	...	23	...	12
Lawrence, Mass.	85,892	...	11	1	...	6	22	...	...	...	...
Tacoma, Wash.	83,972	2	4	1	3	...	3	...	2	...	...
Kansas City, Kan.	82,331	1	16	...	17	...	33	...	14	1	5
Yonkers, N. Y.	79,803	...	32	...	5	...	8	...	...	...	4
Houston, Texas	78,800	...	...	...	1	...	1	...	...	...	...
Duluth, Minn.	78,466	...	12	...	9	2	10	...	3	...	1
St. Joseph, Mo.	77,403	1	22	1	41	1	24	...	11	...	1
Somerville, Mass.	77,236	...	...	...	...	...	1	...	2	...	...
Troy, N. Y.	76,813	...	...	2	19	...	16	1	8	...	2
Utica, N. Y.	74,419	...	18	...	10	...	5	...	1	...	...
Waterbury, Conn.	73,141	2	8	...	14	...	5	...	15	1	...
Schenectady, N. Y.	72,826	...	4	...	20	...	8	1	13	...	7
Hoboken, N. J.	70,324	...	1	1	24	...	7	...	4	...	...
Elizabeth, N. J.	73,409	...	43	...	75	...	37	...	15	...	1
Manchester, N. H.	70,063	...	3	...	1	1	5	...	...	...	...
Evansville, Ind.	69,647	...	5	...	12	...	6	...	7	...	1
Norfolk, Va.	67,452	...	...	...	...	...	...	...	...	...	...
Wilkes-Barre, Pa.	67,105	1	...	3	38	1	15	2	8	...	2
Peoria, Ill.	66,950	...	8	...	27	1	22	1	17	...	...
Erie, Pa.	66,525	...	...	...	1	...	4	...	2	...	3
Savannah, Ga.	65,064	...	...	...	...	...	...	...	...	...	...
Harrisburg, Pa.	64,186	...	23	1	71	...	22	...	3	...	1
Portland, Maine	58,571	1	2	...	...	...	2	...	...	1	2
Totals		94	2,456	83	2,860	80	2,935	43	1,455	16	771
Totals elsewhere		70	1,791	80	2,600	135	2,156	98	1,337	41	775
Grand total		164	3,249	163	5,460	215	5,091	141	2,792	57	1,546

TOTALS IN CHIEF CITIES

Table 8 shows the number reported killed and injured in our largest cities during each of the past five years. The population figures are from the United States Census of 1910. This table is of particular interest since by it the results of the adoption and enforcement of prohibitive or restrictive ordinances can be seen. Sometimes, however, although very small numbers of injuries are reported, more deaths occurred than in other cities having more injuries. New York City reported three deaths, the largest number this year, Chicago reported two, and eleven other cities reported one each, making a total of sixteen deaths in our eighty-four largest cities as compared with forty-three killed last year, eighty in 1909, eighty-three in 1908 and ninety-four in 1907. Although Philadelphia is the one large city having more than 100 injured this year, it is the only time in the last five years that no deaths are reported. Only 771 non-fatal injuries were reported for these large cities this year as compared with 1,455 last year, 2,935 in 1909 and 2,860 in 1908. A marked reduction is seen in the records of practically all these cities, even Philadelphia having reduced its total by one-fourth.

Of these eighty-four cities, sixty-three have a record of five or less injured this year as compared with thirty-seven last year, twenty-six in 1909 and twenty-three in 1908. There were twenty-four of these cities having a clean record this year as compared with eighteen last year and only ten in 1908. On the other hand, only one city this year had a hundred injured, as compared with three last year, six in 1909 and six in 1908. Probably the most remarkable reductions in the last few years have been at Milwaukee, which records a fall of from 112 in 1910, to nineteen in 1911; at Boston, which records a fall from 190 in 1908, to only three in 1911, and at Newark, N. J., a fall of from 150 in 1909, to none in 1911.

WHERE THE RESPONSIBILITY RESTS

The responsibility for the vast majority of Fourth of July injuries clearly rests with city governments, since the employment of death-dealing methods of celebration is subject to their regulation. It is, therefore up to the city governments to decide whether or not the maiming of thousands, the agonizing deaths from lockjaw and the burning to death of little children by fire from fireworks are to be continued. Prohibitory ordinances are most effective and permanent, as shown by the results in Baltimore, Washington, Cleveland, Trenton and other cities, and even restrictive ordinances, if enforced, are quite effective, as shown by the results in New York, Boston, Chicago, Toledo and elsewhere. But the enforcement of restrictive measures is more difficult and requires more constant vigilance on the part of the police. By the sound, it is difficult to know whether an explosion is due to a firecracker 3 inches long or to one 5 inches long or whether it is due to some other forbidden form of fireworks, while under a prohibitory ordinance any explosion would be recognized at once as a violation of the law. Again, the smaller firecrackers, which have been considered so harmless, caused the clothing to catch fire in several instances this year, most of these being girls and young children, who were burned to death. Even the "harmless" sparkler caused some of these deaths which were far more agonizing than if caused by gunshot wounds.

RECENT PROGRESS

It has been well understood that the obliteration of the sorrow and suffering needlessly caused during the annual celebration of the Fourth of July could be brought about only by a vigorous campaign of education favoring more enlightened methods coupled with the enforcement of restrictive or prohibitive legislation against destructive methods. THE JOURNAL has been doing what it could for nine long years and apparently with small result until gradually more attention was given by prominent periodicals and newspapers. A campaign for more sane methods was started which, during the last three years particularly, has been most vigorous. Not only has the press of the country largely taken up the cause, but also local, state and national societies. They have not only argued against the use of fireworks, but, more important still, have provided more rational and patriotic means of celebration. A correspondingly vigorous action has been taken by city councils during the last few years in enforcing restrictive or prohibitive legislation. These forces, using and quoting as they did the statistics of the awful results of the old-time methods, as published annually in THE JOURNAL, have finally reduced the totals of casualties to a small fraction of what they were in previous years. The necessity of perseverance in this campaign for better methods of celebration is aptly shown this year by the record of Philadelphia. In spite of a most vigorous campaign which was carried on in that city this year, the results seem to be comparatively small, that city still having over 200 injuries. A continuance of that campaign, however, will doubtless prove more effective. The enforcement by the city authorities of restrictive measures, similar to those adopted by Chicago, Boston, New York and elsewhere would do much to help the situation. Reports indicate that hundreds of smaller cities and towns this year enforced either restrictive or prohibitive measures.

THE METHOD OF SUBSTITUTION

Better by far than the negative methods of restricting or prohibiting the use of fireworks this year, however, was the more general adoption of positive methods of reform. Our national Independence Day should cease to be a day of destruction and become a day of joy, of recreation and of enlightenment. From every section of the country comes the news that, in place of the senseless din of former years, more truly patriotic methods have been employed. The music of bands, the children's parade, the witnessing of historic floats, and afterward the picnics, the trips to the parks or the visiting of friends—these methods were employed more than ever before. And the result is very evident: the smallest number of lockjaw cases and other deaths reported in any year since THE JOURNAL began the collection of these statistics, fewer destroyed eyes, fewer maimed bodies and an astonishing reduction in the number of injuries. Let the campaign be continued until common-sense methods of celebration shall prevail throughout our fair land!

Crepitus.—The letters composing this word, used as the initial letters of an acrostic, says Dawbarn in the *Medical Record*, help us to remember the signs of fracture:

Crepitus.
Roentgen rays, fluoroscope, etc.
Ecchymosis.
Percussion, osteophonic.
Inability (disability).
Tenderness and pain.
Unnatural mobility.
Swelling, shortening, or other deformity.

Therapeutics

ANTERIOR POLIOMYELITIS: INFANTILE PARALYSIS

The picture of a child suffering from more or less weakness of one of its limbs, which on examination is found to exhibit atrophy of a particular group or groups of muscles, is familiar to every practitioner. This condition was designated as infantile paralysis.

During the last twenty years infantile paralysis has been observed repeatedly in epidemic form. The prevalence of the disease has greatly increased, in epidemics especially, and it has consequently received an increasing amount of investigation, both of its clinical and pathologic features.

Previous to the recognition of its epidemic occurrence, it was described as a disease of the spinal cord affecting chiefly the motor cells of the anterior horns of gray matter. It was considered by some pathologists that the degeneration of these motor cells was the primary lesion. By others it was considered that the cell degeneration and atrophy was due to a congestion and inflammation of the interstitial structures of the spinal cord. After it began to be realized that the disease occurred in epidemics, the opinion gained ground that the disease was of an infectious character, due to the action of some specific poison, and not a local inflammation or nerve degeneration due perhaps to climatic influences or to some autogenous poison, the character of which was undetermined. It is now believed that poliomyelitis in an acute infectious disease which affects chiefly the central nervous system, which may affect the brain as well as the spinal cord, and which may affect the white matter and the meninges as well as the gray matter.

The occurrence of the disease in epidemics has naturally raised the question as to whether it is contagious. Much evidence has been presented in favor of this theory. It has been asserted that the disease is directly transmissible from a patient having it to another with whom he comes in contact; that it may be carried by a third person from the person who is sick to a person who subsequently becomes sick; and that in many cases in which the direct transmission has not been recognized, it has really occurred through one who has been designated as a carrier, who may be a person who has suffered a slight or abortive attack of the disease which has not been recognized.

While these different methods of transmission have been advanced and discussed, it must not be forgotten that a very large number of people who come in contact with the patient suffering from the disease do not contract it. This may be due to some immunity to the disease which is not at present understood, or to the slightly contagious character of the disease.

In most epidemics more than 80 per cent. of the cases have occurred in children under 10 years of age, although a few cases have been observed in adults. Its occurrence in adults is not new, as occasional cases were reported before the epidemics were observed.

The mortality varies from 3 to 30 per cent., according to the severity of the particular epidemic.

The manner in which the contagious element is received has not been definitely established. There seems to be considerable reason for believing that the secretions from the nose and throat contain the contagious element, and that this may be received into the corresponding organs of the individual who contracts the disease. In some epidemics it has seemed that the disease was carried by dust, and it has been proposed to limit the spread of the epidemic by watering the streets. Some observers have implicated the common house-fly as a carrier of the contagion, and while the transmission of contagion in this way seems possible, it is difficult at the present time to prove definitely the culpability of this insect.

The disease occurs more frequently during the warm months of June, July, August and September. The period of incubation has been found to vary from three to thirty days, but is usually from eight to ten days.

The character of the contagious element of the disease for a long time baffled the bacteriologists. Within the last year or two it seems to have been determined with reasonable probability that this is a microorganism much smaller than those which have hitherto been determined to have an important part in the causation of disease. This particular organism is so very small that it can be detected only with the greatest difficulty by the most powerful microscopes. It is so small that it passes through filters which have hitherto been relied on to obstruct entirely the passage of pathogenic organisms. That it is a living organism capable of reproduction seems probable from the fact that very small quantities of the toxic element suffice to produce the disease experimentally in the lower animals, and particularly in the monkey, and that the disease may be transmitted through several successive monkeys.

The effect of this poison on the human individual varies very greatly. The typical lesions, as already stated, are found in the spinal cord, and consist of the changes characteristic of congestion and inflammation. These are a proliferation of the cells about the blood-vessels, with a narrowing of their caliber, and edema in the interstitial substance of the gray matter of the cord. These vascular changes, while most marked in the gray matter of the cord, are seen also in the white matter and in the meninges. The degeneration of the motor cells of the gray matter seems to be secondary to these congestive and edematous changes. Changes of similar character are found in some cases in the brain. The effects of the disease are also observed in the lymph-glands and spleen. The parenchyma of the heart, liver and kidneys shows cloudy swelling.

The symptoms of the disease are those of a general infection with localization in the nervous system. The general symptoms precede the peripheral manifestations of the affection of the nervous system. They are fever, which may be accompanied or preceded by restlessness, irritability and insomnia, or in some cases by restlessness and indifference. There may be convulsions, headache, pain in the back and limbs. Where the severity of the disease is not so great as to cause convulsions, there may be twitchings of the limbs and symptoms of meningeal irritation of the brain and cord. The digestive organs may be disturbed, and there may be vomiting and diarrhea. In other cases constipation is present. Sometimes sweating is a prominent symptom. After these general symptoms have lasted from twelve to seventy-two hours, the characteristic peripheral symptoms appear. These consist of a weakness, or complete paralysis, of certain groups of muscles in one or more of the extremities. Usually no impairment of power is noticed until there is complete paralysis of motion. Sensation is usually unaffected. The loss of motion is accompanied by impairment of the reflexes. If a lower extremity is affected, the patellar reflex of that limb is absent. In severe cases all of the limbs may be affected, and the paresis may advance upward until the muscles of speech, of deglutition, and finally of respiration are affected, the latter usually resulting quickly in death. Where a single limb

is affected, the paralysis, after a few days, may gradually diminish, and in a few weeks the power of the limb may be entirely restored. In other cases there may be little change for four or five weeks, when the patient may gradually regain strength, but this improvement, after continuing slowly for several months, may entirely stop, short of complete recovery. The general symptoms usually entirely disappear within a week. There is not, in ordinary cases, interference with the function of the bladder or rectum.

The resulting paresis may be followed by great impairment of the usefulness of the limb, and in many cases by considerable deformity, and, especially when the lower limb is affected, by various forms of club-foot.

The diagnosis is not usually suspected when the patient is first seen, unless at that time paralysis has already intervened and is called to the attention of the physician. When the existence of an epidemic has been recognized the physicians in a locality are more alert to detect cases of the disease, and as a rule the diagnosis is made earlier. Under these circumstances, indeed, the physicians not infrequently err in diagnosticating the disease when some other disease is present.

A search is still being prosecuted for a serum which will cure the disease or cut short its course and prevent its more serious effects. The discovery of such a serum would give increased importance to the early diagnosis of the disease, and efforts have been made to find some method of making a correct diagnosis of the disease before the appearance of the paralysis. The blood has been examined very many times, but no definite change in it has been found, except that generally there is a so-called leukopenia, a diminution in the number of white blood-cells. The cerebrospinal fluid has also been examined in many cases. When the disease is fully developed this fluid shows very little change. There may be a slight increase in the intraspinal pressure, but the fluid is clear. It may contain an increased number of leukocytes, but does not contain bacteria. These findings enable one to distinguish the disease from epidemic cerebrospinal meningitis or from tuberculous meningitis, if the presence of either of the three diseases is suspected, but the early symptoms of poliomyelitis are so like those of many illnesses of childhood, which are of not great importance or significance, that one would hardly be sure of making an early diagnosis of every case of poliomyelitis. Practically, except in the presence of a recognized epidemic, it is difficult, if not impossible, to make the diagnosis of the disease before the occurrence of the peripheral paresis, and as this may be delayed for three or four days, the diagnosis will usually remain in abeyance for several days after the child is taken sick.

Before the peripheral paresis occurs, the disease for which it is most likely to be mistaken is cerebrospinal meningitis. From this disease it may usually be distinguished by the absence of the pain in the back and of rigidity of the muscles of the neck, by the early discontinuance of vomiting, by the absence of impairment of intelligence, and by the absence of Kernig's sign. In adults it may be mistaken for multiple neuritis. Here the more complete paralysis and the rapid wasting of the muscle are important diagnostic signs.

TREATMENT

As already stated, although the search for a serum is being assiduously prosecuted, it has not been definitely determined at the present time. It is, therefore, necessary to rely on general and symptomatic treatment in combating the disease. Perhaps the one measure of treatment on which all writers now agree as being important, is absolute rest. The child should at once be placed in bed and kept quiet, as should all sick children. Following the treatment generally recognized as useful in all infectious diseases, the first medicinal treatment to be prescribed should be a laxative. Probably nothing is more useful than 2 grains of calomel (this for a child 3 years of age), although some prefer the administration of a saline laxative, and still others, castor oil. If vomiting is an important symptom, the calomel will usually be found easier of administration and more satisfactory in action. Elimination may also be promoted by a diuretic, than which none is more useful than 5 grains (0.30 gm.) of citrate of potassium, repeated every four hours—this also for a child of 3 years. If the skin is hot and dry, a diaphoretic may be employed. For this perhaps nothing is more useful than a white woolen blanket wrung out of hot water and wrapped about the child, and outside of this is placed another woolen blanket. This hot pack should not be long continued. Perhaps as valuable is a hot bath or hot sponging.

If the pains are moderately severe, the salicylate of sodium may be given in doses of 2½ grains (0.15 gm.) repeated every two hours, for a child of 3. If the pains are severe, it may be necessary to give opium in some form. This is best administered as the tincture of deodorated opium; one drop, in water, every two or three hours, as needed.

The fact that hexamethylenamin has been found to be eliminated in the cerebrospinal fluid has led to the recommendation of this drug in poliomyelitis. It is highly recommended by some writers who have used it, and as unhesitatingly condemned by others. It is a harmless drug, however, and may do some good. The dose for a child 3 years old is 3 grains (0.2 gm.) every six hours.

Finally, it remains to consider the use of drugs directed toward combating the local lesion of the disease. Considering that congestion, inflammation and edema are found in the spinal cord of patients who have died of this disease, it has been recommended to give ergot, on the theory that this would contract the vessels and diminish the congestion and counteract the edema. It must be remembered, however, that while the vessels show marked cellular proliferation, they are not dilated, but on the other hand, the cellular proliferation often leads to narrowing of their caliber, and some observers have found thrombi within them. But in spite of these facts, not a few believe that ergot is indicated, and that its administration is followed by improvement in the symptoms. This drug may be discontinued when the acute symptoms have subsided, and then the question arises of giving some drug which will remove the products of the inflammation. For this purpose no drug can be more useful than an iodid; but the use of an iodid for this purpose is condemned by many as useless. Small doses, as 1 grain (0.05 gm.) three times a day can do no harm and may be of value.

The application of counterirritants over the spine has seemed to many clinicians to be productive of good, but this measure has been condemned by others.

Recollecting the congestion which is observed, some advise that the child should not be allowed to lie continuously on its back, but should be made to lie first on one side, and then on the other side; but here the opinion of the profession is not a unit, many advising that

the child be kept on the back. It seems good sense, however, to change the child's position.

Ice-bags to the head and spine have been advised by some, and as vehemently condemned by others. As children bear ice applications badly, it seems more sensible to relieve congestion of the central nervous system by hot sponging and hot foot baths with the patient reclining.

While treating the acute stage of the disease, one must bear constantly in mind the disastrous after-effects which are likely to follow, and must use every method available in the endeavor to prevent these. When the muscles become paralyzed, great care should be taken to maintain the limbs, especially the legs, in such a position that the affected muscles will not become overstretched and that the unaffected muscles will not become overactive so as to draw the limb into a distorted position. This may be accomplished by elevating the clothes so that the weight of them will not press on the limbs, and by putting sand-bags around the limbs in such a way as to counteract the tendency to abnormal displacement.

After the acute symptoms have subsided, the treatment must be directed to the affected muscles. It is an important question how soon the treatment of the muscles should commence, and what measures should be adopted. As the motor nerve-cells are destroyed or at least temporarily impaired the muscles are deprived of their natural motor control. While one is waiting for the restoration of the nerve-cells, if it is to occur, the nutrition and contractility of the muscles must be maintained. For this purpose nothing is better than galvanic electricity, which should be applied gently to the paralyzed muscles, daily for ten or fifteen minutes, with the negative pole active. This will improve the motility of the part and maintain its contractility. Massage should also be given, but this should be gentle and not severe, and care should be taken not to damage the nerves in the vicinity of the muscle by undue force. In three or four weeks the patient should be encouraged to make voluntary movements of the affected muscles. If the use of the muscles is very greatly impaired, much benefit will be found from placing the patient in a warm bath at a temperature of 100 to 104 F., which must be maintained while the patient is in the bath. The water surrounding the limb on all sides helps to counteract the force of gravity in drawing it out of the proper position. The movements, when they are feeble, are also more easily accomplished in the warm bath. A system of muscular education should be undertaken with the patient, and he should be taught and encouraged to move the different muscles as far as he is able, and he should be coaxed to do this without having it impressed on him that he is moving his muscles, but rather he should be deceived into thinking that he is playing a game or doing some athletic exercise which interests him aside from the muscular movement.

It used to be the custom to advise and to give strychnin even in large doses soon after the symptoms of paralysis developed. It was then given for many months, at least as long as any improvement occurred. Most clinicians now, however, believe that strychnin should not be given. Theoretically the facts would be these; that while the inflammation was active, strychnin would certainly be contra-indicated. Also, if strychnin caused the child to be irritable, restless and nervous, even if given in small doses, if it caused the child's heart to become irritable or rapid, it certainly is contra-indicated. On the other hand, five or six weeks after the onset of the disease, a test of strychnin for a week to see if it would stir up the motor excitability of the spinal cord to the point of improvement, is perhaps advisable. If its action is for good, it could be continued; if it causes undesirable symptoms, it should be stopped.

The treatment by electricity, massage, and systematic exercise should be continued for from six to eighteen months. When, after the expiration of such a period, the patient has been at a standstill for a month or two, the propriety of orthopedic treatment should be considered. This varies from the adjustment of braces to bloodless and bloody surgery. Unquestionably great harm has been done by the application of heavy braces to patients suffering from infantile paralysis; but, on the other hand, there are a certain proportion of patients who are benefited by a light and well-fitting brace. This should not be used to such an extent that the patient will not get an adequate amount of exercise with the affected muscles. Unless this is looked out for, harm will be done by the brace.

The transplantation of muscles, which seemed to offer so much hope of benefit to this class of patients through the restoration of muscle balance, does not usually accomplish as much as is hoped for. Nerve anastomosis has accomplished somewhat more satisfactory results, but is often a disappointment. Its object is to effect restoration of power to the affected muscle. It is especially applicable when the muscles of the hand or shoulder are involved.

Tenotomy to counteract the excessive contraction of healthy muscles has sometimes proved beneficial, but the operation should be performed with care, and should only be undertaken in suitable cases. In some cases where there is excessive mobility of a joint it has been proposed to make the joint stiff by an osteoplastic operation. In still other cases, especially about the ankle, the removal of a portion of the bone, especially of the astragalus, has sometimes served to overcome a deformity due to this disease and to increase the usefulness of the limb.

The proper prophylactic treatment cannot be said to be definitely determined, but inasmuch as there is considerable reason for believing that the disease may be directly transmitted from one person to another, and that the contagium may be carried by a well person from one who is sick, it is desirable to insist on strict isolation of every patient affected with the disease.

It may be advisable to have the streets sprinkled systematically in towns where the infection is recognized to be present.

The room where the patient is sick should be carefully screened and flies should be kept away from the patient, for his own comfort as well as to prevent the possibility of their carrying infection to others.

When a community becomes afflicted with a scare of epidemic infantile paralysis, and frightened parents desire to do something to prevent their offspring from becoming affected with the disease, hexamethylenamin may be administered internally, and gargles of 10 per cent. solution of hydrogen peroxid, or other antiseptics, may be advised.

The Pretty Nearly Clean Operator.—Let us never forget that almost invariably if a clean, freshly-made wound fails of primary healing it is because of actual, tangible, visible particles of dirt conveyed therein while operating or subsequently during dressings. Remember this: Few hands, few failures! and this even when the air is dusty.—Dawbarn in the *Medical Record*.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, AUGUST 26, 1911.

A TRIUMPH OF PREVENTIVE MEDICINE

In spite of the human tendency to forget what is disagreeable, most of our readers will recall the surprise and mortification with which the American people confronted the devastating epidemics which swept through the camps of the troops mobilized at the time of the Spanish War, thirteen years ago. It has been, therefore, most agreeable to read the highly favorable health reports which have come from time to time from our troops in Texas, and which have been brought to the attention of the medical profession by the President of the United States in words of hearty commendation.

Now that the Maneuver Division has been abolished by the return of most of its constituent organizations to their stations, it is of interest to be informed from an authoritative source what were the methods of procedure by which the new knowledge of preventive medicine has been applied to camp sanitation, and to have an exact and official statement of the results accomplished. It is impossible to read Colonel Kean's article published in another column of this issue, and especially the remarkable comparative figures at its end, without realizing that an epoch-making achievement in preventive medicine has been accomplished by the Army Medical Corps. For purpose of comparison with the Maneuver Division a table is given showing the typhoid record of a division of volunteer troops camped at Jacksonville, Fla., in 1898 under conditions similar to those at San Antonio this summer. But the difference is amazing. The division of 1898 has 2,693 cases with 248 deaths, which was about the average typhoid incidence of the camps of the Spanish War, while the division of 1911 had one case and no death. The deaths from all diseases were 281 for the former and eleven for the latter.

At the beginning of the Spanish War it was an accepted belief on the part of the medical profession that typhoid epidemics were due to polluted water-supplies and that with pure water this disease was not to be feared, but the experience of that war demonstrated that the question was not so simple and that contact infection, flies and other factors had to be considered. These other factors have been studied with much care in recent years, and it has been found that they can be to a large extent, but not entirely, removed by scrupulous attention to the cleanliness of the camp and the details of personal hygiene among the men.

While the disposal of fecal matters and other wastes seems to have been carried out in this camp with admirable thoroughness of execution and simplicity of method, no new sanitary principle was evoked and we must look further for the explanation of the enormous discrepancy between the amount of typhoid fever in the Second Division, Seventh Army Corps, thirteen years ago and the single case in the Maneuver Division.

It is clear that the medical officers attribute their triumph over typhoid fever to the method of immunization by the injection of dead cultures of the typhoid bacillus which was introduced into the army two years ago as a voluntary measure, and was for the first time made compulsory when applied to the officers and men of this division. The value of this preventive measure, as well as its innocuousness, has thus been demonstrated conclusively and on a great scale. It would seem, therefore, that the time has come for the medical profession throughout the country to follow the example of the Army by making use of the typhoid prophylaxis in general practice. The high degree of efficiency shown by the medical service in the recent mobilization is not fortuitous, but is the fruit of patient, laborious and ably directed efforts to apply the lessons of the Spanish War, and to assure the best results. This efficiency is a legitimate source of pride and satisfaction to the medical profession of the country, and should be a sufficient demonstration to the government of the wisdom of adequate and generous provision for its sanitary service. It is regrettable to read of shortages of officers, of men, and of mules for the sanitary organizations, when only a single division is mobilized.

DEATHS BY DROWNING

This is the season of the year when deaths by drowning are most frequent. Every Monday morning's paper brings its quota. The day after every holiday tells of a like toll of young lives paid for foolishness or accidents that might have been avoided. Usually the victims are in early life and in the very best health, otherwise they would not have taken the chances that prove fatal, and it seems too bad that so often apparently nothing can be done for them. Until well on in September these casualties will continue.

Undoubtedly as the result of old traditions there is in many places too ready acquiescence in the belief that a person who has been under water for five or ten minutes or even fifteen or twenty minutes is necessarily dead. There are well-authenticated records of the resuscitation of persons who had been submerged for half an hour or even longer. Such cases occur particularly in women and children, and the reason seems to be that the fright at finding themselves in danger of drowning actually brings on a collapse or faint in which the heart and breathing stop and they sink, but low-grade life

processes continue for a considerable period. Strong men who have battled for their lives and then sunk are not so often revived, though if taken with a cramp they too may suffer from shock or fright with the resultant collapse that is apparently Nature's method of giving the longest possible opportunity for life under these circumstances.

All the recent experience with regard to death from shock or so-called death is extremely interesting in this regard. Patients have been reported as not breathing for fifteen minutes to half an hour and yet they have been resuscitated. The most interesting phase of surgical experience in this regard has been that sometimes when all other methods failed actual rhythmic squeezing of the heart caused that organ to resume its beating. In some of these cases this beating of the heart only maintained itself after the injection of a certain amount of physiologic salt solution into a vein in order to give the heart something to work on more readily.

There would seem to be a question whether some of these methods should not be employed on persons supposed to be dead from drowning. Ordinarily the methods of resuscitation are and ought properly to be exercised at the scene of the accident. Often the person is pronounced dead even before a physician has seen him. Only rarely are such cases transported to hospitals to be treated. There is an unfortunate prejudice among young ambulance surgeons by which ridicule attaches to the bringing in of a patient in whom death ensues without definite signs of life having been exhibited after the patient's reception into the hospital. The ordinary methods of artificial respiration might well be carried on in an ambulance and then in the hospital itself. Recourse might be had to any procedures, even surgical, that seem to give the slightest hope.

Certainly in the present state of our knowledge it would seem that some direct irritation of the heart muscle should be tried before the patient is pronounced dead. The responsibility of surgeons who were operating at the moment when collapse occurred has led to a very thorough development of means of resuscitation for their patients. Unfortunately with regard to the drowned there is no such responsibility and the consequence has been that all of the means at the command of recent surgery have not been applied. The saving of even a few of these young lives would be a very precious advance for modern medicine. The subject deserves the special attention of surgeons.

FOURTH OF JULY CASUALTIES

We present this week statistics showing the number of deaths and injuries resulting from the celebration of the Fourth of July in 1911. It is very encouraging to note a most remarkable reduction in the totals of killed and injured, these being the lowest since 1903 when THE JOURNAL began the compilation of these statistics. Of special significance is the great reduction in the number of deaths from tetanus. These reductions are due to an aroused public sentiment favoring saner methods of celebration, and in the creation of this public sentiment the statistics gathered and published by THE JOURNAL have had more to do than any other one factor.

Nine years ago THE JOURNAL began the collection and publication of these statistics. A year or so prior to that time a few public-spirited newspapers, notably the Chicago *Tribune*, immediately after the Fourth, had published, as a news feature, imperfect lists of the killed and injured. Such lists as were published the day following the celebration were necessarily imperfect. To secure accurate data it was necessary in a deliberate manner to verify the newspaper reports, eliminating those which on investigation were found not to be due to the celebration of the Fourth of July; to obtain reports from hospitals, health officers, physicians and others, of cases which had not been reported by the press and, of still more importance, to include the information regarding those who contracted lockjaw and the deaths which occurred days or weeks following the injury. The compilation of these complete data was begun in 1903 by THE JOURNAL, which year after year, has published actual facts concerning the awfulness of the results of our annual Fourth of July celebration; facts showing the agonizing death from lockjaw of hundreds of bright boys and girls; the burning to death of others, mostly girls and little children, and the shooting and maiming of thousands—all this, that we might celebrate the birthday of American freedom! The callous indifference with which the reports were received was disheartening. In 1907, however, in addition to the other figures, the numbers killed and injured for each of the larger cities were shown separately and it was pointed out that the responsibility rested with the city governments. Further, the matter as it appeared in THE JOURNAL was reprinted in pamphlet form and these were sent to city officials, to newspapers and to others interested. They were also furnished in quantities to numerous state and civic societies. From that time the change has been marvelous. Newspapers generally began to publish our statistics, and magazines and periodicals took up the cry, urging the adoption of more common-sense methods of celebration and demanding a restriction of the sale and use of fireworks. In this campaign THE JOURNAL figures were quoted far and wide, and the expression, "a safe and sane celebration," as opposed to the "barbarous and insane celebration," became familiar to every one. Then several cities, like Toledo, Chicago, New York and Boston, adopted restrictive measures, thereby greatly reducing the casualties, while Baltimore, Washington, Cleveland and Trenton vigorously enforced prohibitory ordinances, with the result that deaths and injuries were reduced to the minimum. And now such restrictive measures have been adopted by thousands of cities, towns and villages throughout the country.

On the other hand, city governments, civic organizations, medical and other societies took up the task of providing better means of celebration; Springfield (Mass.), St. Paul, Detroit, Toledo, Chicago, Pittsburgh and other cities spent thousands of dollars, employed special artists, or adopted other measures, to provide special programs in which music, the display of flags, the marching of soldiers, children's parades and historic floats illustrating natural achievements were prominent features. The results in these cities have been so encouraging and satisfactory that the continuance of such methods and their wider adoption are assured.

This is the day for the merciless exposure, in this country, of low morals, graft and disregard for law which are rife enough in high places and low. It is to be regretted that our national holiday has been largely given over to a furtherance of this apparent decadence in our national life. But an awakened public conscience must not rest with the exposure of wrong-doing; it must establish honesty in place of graft, morality in place of immorality, and love of law and order in place of lawlessness and disorder. And so the forces working for more enlightened methods of celebration should realize that in the use of pageants, military drills and parades with the display of floats representing historic events and national achievements, the Fourth of July is the nation's greatest opportunity to preach the gospel of national and civic righteousness and to point the attention of the youth of our land to the characters who have made and developed this nation and who are worthy of emulation.

The work began by THE JOURNAL, therefore, has grown and expanded not only along the line of initiating "safe and sane" methods of celebration but also in the adoption of ordinances which would repress the irresponsible hoodlum and the reckless users of firearms and blank cartridge pistols. And the results in the saving of lives and the prevention of needless injuries have been most gratifying. Injuries have been reduced from 5,623 each year to 1,603; the total of deaths from 466 to 57 and agonizing deaths from lockjaw from 406 to 10—naturally, THE JOURNAL feels a satisfaction that its labors have resulted in so much good to the people of this country. But the campaign must not stop. A record of 57 people killed, including ten children tortured by lockjaw and 1,546 others more or less seriously injured as a result of this year's celebration, still reflects too seriously on the conscience and common-sense of the people of our land to permit a cessation of active endeavor until all such needless casualties have been eliminated. The work of reform must go on until the Fourth of July shall cease to be desecrated by disorder and destruction with its aftermath of suffering and sorrow, but shall become as it should be, a day conducive to a stronger love of law and order; to a genuine love for our country and the principles for which it stands.

MALTA FEVER IN TEXAS

On page 730 of this number of THE JOURNAL Dr. Ferenbaugh describes several instances of Malta fever developing in Texas. There seems to be no occasion to doubt the correctness of the diagnosis in these cases. They occur under circumstances that are known to be favorable for the development of the disease in question, the symptoms and clinical course are those of Malta fever, and positive agglutinative results are given by the serum of the patients with cultures of *Micrococcus melitensis*, the accepted cause of Malta fever. So far as known this is the first actual demonstration of the indigenous occurrence of this disease in this country. It is true that Colonel Bruce, the discoverer of *Micrococcus melitensis*, states that Malta fever occurs in the Mississippi Valley,[1] but he gives no authority for this statement.

Single instances of imported cases are described by A. A. Smith[2] and Musser and Sailer,[3] and Bruce narrates the following accidental experiment, which played an important part in clearing up some of the problems of the genesis of the disease: In 1905 the S.S. *Joshua Nicholson* shipped sixty-five goats at Malta for export to the United States. The milk was drunk by the captain and many of the crew, with the result that an epidemic of Malta fever broke out on board the vessel, almost everyone who drank the milk being infected. Even after the goats reached America and were placed in quarantine, a woman who drank some of their milk had the fever.

Now that the disease has been shown to occur in Texas, it would not be strange at all if it should be found that it is more widely spread than has been apparent, in all probability masquerading, like so many other febrile diseases, under the names of hitherto better-known fevers. Its demonstration in Texas at this time is another illustration of the great advantage and power of applying modern methods of investigation to clinical problems "in the field" so to speak, and it is a matter of considerable gratification to note that for this kind of work the medical officers of the army appear to be especially well equipped.

It may be recalled that Malta fever is a disease of long duration, characterized by continued fever, profuse perspiration, constipation, frequent relapses ("undulant fever"), rheumatic or neuralgic pains, swelling of joints, or orchitis. Its recorded history is brief and the important discoveries to which we owe our present knowledge about it have been made by British army medical officers. The first thorough clinical description was written by

1. Bruce, D.: Malta Fever, Modern Medicine, iii, 17. This is an excellent account of the disease and should be read by all who wish to review the facts concerning it. See also Hughes, M. L.: Mediterranean, Malta, or Undulant Fever, 1897.

2. Smith, A. A.: A Case of Levant Fever, Tr. Assn. Am. Physicians, 1897, xii, 414; also Am. Jour. Med. Sc., 1898, cxv, 50.

3. Musser and Sailer: A Case of Malta Fever, Phila. Med. Jour., 1898, ii, 1408, and Tr. Assn. Am. Physicians, 1899, xiv, 163.

Marston in 1861; in 1887 Colonel Bruce discovered the specific bacterium *Micrococcus melitensis;* in 1897 Wright and Semple applied the method of serum agglutination to the diagnosis of the fever, and since 1904 the commission formed under the auspices of the Royal Society of London has made valuable contributions to our understanding of its mode of spreading, the most important being that goats may harbor the cause of the disease in their blood without being themselves manifestly ill, and that the micrococcus leaves the body in the milk, thus affording adequate explanation of many features in the epidemiology of the disease as well as a basis for preventive measures. In human beings the micrococcus is excreted in the urine in a considerable proportion of cases and this may be a means of conveying the disease from place to place as well as of local dissemination.

Current Comment

A POSSIBLE SOLUTION OF THE STORAGE EGG PROBLEM

Under the Food and Drugs Act some of the cold storage people have been much exercised by the regulation requiring that eggs shall not be stored longer than three months before using. They assert not only that it is impossible to keep all of their stock moving within that length of time, but that it is not necessary, as the eggs do not deteriorate sufficiently in that time to make them dangerous or undesirable as a food. Egg dealers have also been accused of removing bad eggs from the shells, canning them, using various preservatives, and selling them to bakeries to use in their baking operations which, of course, would be in violation of the Food and Drugs Act. Attempts have also been made in this country, we believe, to desiccate the egg but probably without great success, as the industry has not attained great proportions. In German China, however, according to the report of Consul J. C. McNally at Tsingtau, the desiccation of eggs is successfully carried on and the product is shipped in large quantities to Germany. One shipment has also been made to the United States with the expectation that the eggs will comply with the Food and Drugs Act and that a thriving trade may be built up with this country. The nature of the machinery and the exact method employed in making these dried egg products are held secret. The eggs are carefully candled, the fresh ones are washed and opened and the yolk separated from the white. With the aid of a suction pump the yolk is drawn from a tank through a large pipe into a vacuum in the machine and is dried in fifteen seconds. It is then passed on to a larger receptacle into which the material falls in the form of flakes, which look clean, have a good color and a fresh odor. The flakes are again passed through a machine and come out in a powdered form ready for shipment. It is said that this product can be kept indefinitely if stored in a dry, cool place. The whites of the eggs are put into small glass-bottomed trays about one foot square and placed on shelves in a room having a temperature of 105 to 130 F. After thorough drying, the material is broken up into small pieces or is sometimes powdered or reduced to crystal form resembling granulated sugar. The shells are sold in Germany for poultry food. It requires about seventy yolks to make one pound of the dried product and the whites of about 200 eggs to make a pound of the egg albumin. The price of the whole dried eggs is 31 cents a pound; of the albumin, 44, and of the yolks, 24 cents a pound. This industry in German China is said to be growing rapidly. If all that is claimed for it is true, this certainly should be a more satisfactory method of preserving eggs than that of cold storage. The difficulty, in this country at least, would be the lack of government supervision to insure that the eggs were fresh when utilized.

THE IRREPRESSIBLE CONFLICT

In 1858, William H. Seward, senior senator from New York, in describing the approaching struggle between two opposing conceptions of our national government, spoke of it as "the irrepressible conflict." His prophetic eye foresaw the coming storm. He saw, too, how impossible it was to prevent it. This phrase, caught up at once all over the nation, became one of the famous sayings of this strenuous period. The tendency of history to repeat itself has become proverbial. The present "investigation" of Dr. Wiley by the congressional committee affords another instance of a conflict just as important and irrepressible as that of fifty years ago. At the beginning of the hearing, the question at issue was whether or not Dr. Wiley had violated the law in the manner of employing an expert pharmacognosist. But this point has long ago been lost sight of. The committee and congress are now called on to determine whether the national Food and Drugs Act, won after years of struggle, shall be administered for the benefit of the people, or nullified for the profit of the manufacturers. Wiley and Bigelow and Kebler on the one hand, and Wilson, McCabe and Dunlap on the other, are but the representatives of the opposing interests. The real question is: Which is of greater importance, the health of the American people or the financial prosperity of certain business houses? This is the "irrepressible conflict" of to-day. It must be fought out to a finish and it must be settled aright. Which will triumph, the people or the interests? This is the real issue in the Wiley case.

HEALTH CAMPAIGN IN THE SOUTH

Ten thousand patients suffering from hookworm disease were treated in 107 days by one of the representatives of the Alabama State Board of Health with the help of three assistants, this work covering five counties of Alabama. In addition to treating the victims of the hookworm, the representatives of the state board of health are visiting the physicians, the school teachers and the schools, lecturing to public meetings, showing stereopticon views to demonstrate the cause and progress of the disease and the results of treatment, and using the country newspapers as a means of publicity for their work. The value of the Panama Canal as an object-

lesson in modern sanitation has been frequently emphasized. The work now being done in the southern states for the elimination of hookworm disease will be an even greater demonstration of the economic value of modern medical science, when practically applied. The results of restoring to health ten thousand men and women cannot fail to be apparent in all branches of industry, commerce and society in the affected region. The extermination of the hookworm means a new South of commercial and manufacturing importance hitherto undreamed of. Health is wealth; sickness is waste, and no nation or section can prosper when the vitality of its people is being wasted.

Medical News

ALABAMA

Gift to Hospital.—Boston friends of the Tuskegee Institute have donated a hospital to the institute to be known as the "John A. Andrew Hospital." The donors do not desire to have their names made public.

Sanatorium Company Organized.—The Columbiana Sanatorium, Land and Improvement Company has been organized at Columbiana with Dr. Joel Chandler, Birmingham, as president. The company expects to erect a sanatorium and hotel.

Personal.—Dr. John D. S. Davis, Birmingham, is reported to be seriously ill with uremia in Colorado Springs.——Dr. William W. Haden, Huntsville, has been appointed health officer of Madison County, vice the late Dr. William C. Wheeler, Huntsville, to fill unexpired term.

Rotation in Office.—The Madison County Medical Society on August 8 adopted resolutions providing for rotation of the office of health officer in Madison County after the expiration of the present term. The vacancy is to be filled by the senior member of the society who, after a year's service, will resign in favor of the one next junior to him and so on down the line.

GEORGIA

Personal.—Dr. Floyd W. McRae, Atlanta, has sailed for Europe.——Dr. Walpole Brewer, after an absence of eight years in Tennessee and New York, has returned to Atlanta.

New State Journal in Georgia.—In line with the action of other states the Medical Association of the State of Georgia has begun the publication of a state journal as the official organ of the association. The first number appeared in August. It is under the editorial management of the board of councilors, of whom Dr. Wyman W. Pilcher, Warrenton, is chairman. It is issued from Augusta. The first number contains a number of interesting papers and discussions, the program and minutes of the 1911 state meeting, society reports, some editorial comments, personal items, book reviews, etc. It is a very creditable number, neat in its mechanical appearance, and should succeed.

MISSOURI

University Medical College to Continue.—It is announced that the University Medical College of Kansas City, which was reported to have closed its doors, is to be continued, but that it will give only the last two, or clinical years. It is stated that it will accept only students who have taken the first two years' work in medical schools having standards as high as those held by the University of Missouri Department of Medicine.

NEW YORK

Personal.—Dr. Ernest P. Livingston, New York City, sailed for Europe on August 12.——Dr. Claude A. Frink, New York City, has recently been appointed attending surgeon to the New York City Children's Hospitals and Schools.——Dr. Amos T. Baker, Fishkill-on-the-Hudson, assistant superintendent of the Matteawan State Hospital for the Criminal Insane, has resigned.

Milk Exhibit for State Fair.—The New York Milk Committee and the New York Dairy Demonstration Company have accepted an invitation from the State Commissioner of Agriculture to make an exhibit at the State Fair at Syracuse in September. The methods of producing pure milk for New York City will be shown. The milk committee will show by charts and literature what is being done all over the United States in establishing uniform standards of milk inspection, the proper relation between municipal and state authorities, and the need for interstate cooperation. There will be a reproduction of a city milk station and clinics and demonstrations will show what is being done to reduce infant mortality.

New York City

Anterior Poliomyelitis.—The Rockefeller Institute of Medical Research announces its desire to receive and treat gratis acute cases of anterior poliomyelitis during the present summer and fall. In the event of any fatal case, if an autopsy is held, portions of the spinal cord, the nasal mucosa, tonsils and adenoids are asked for.

Sea Breeze.—Under the auspices of the Association for Improving the Condition of the Poor, 25,886 mothers and infants were given an outing at Sea Breeze last summer. Up to August 16, of this year, the association has sent 17,059 mothers and children to this resort, and of this number 3,000 stayed a week or longer.

Another Milk Station Opened.—The board of health has opened a fifteenth pure milk station in Division Street, one of the most congested sections of the city. In all of the stations to August 13, 10,844 babies were registered; there were twenty-nine deaths during the week ending August 12, the highest number recorded thus far in any one week.

Infant Death-Rate Lower.—The total number of infant deaths from January 1 to August 12, according to statistics of the health department, was 9,398 as compared with 10,365 for the same period of 1910. Dr. Lederle has issued a warning to those conducting the campaign in behalf of the babies and to parents reminding them that while the time of the highest mortality has passed there is often a "high" period in September and vigilance should not be relaxed.

Health Department Closes Bathhouses.—When the authorities closed the bathhouses on Flushing Bay, it was rumored that the action was taken because of the insanitary conditions and the existence of several cases of infantile paralysis in the neighborhood, but later it was learned that the real reason was that the bathhouses did not have proper sterilizing plants for the bathing suits and there were complaints that this had been the means of communicating disease.

Typhoid Fever and Infantile Paralysis Increase.—From August 1 to 12 there were reported to the health department 279 cases of typhoid fever against 191 for the same period last year. In the nine weeks ended August 12 there were 448 cases reported against 298 in the same period of 1910. While there seems to be no certainty as to the cause of the infection the department is inclined to attribute it to infected milk and the supply of milk from several localities has been stopped temporarily. Since the first of August sixteen cases of infantile paralysis have been reported to the health department while there were no cases reported at that time last year.

The Need of Better Statistics.—The relation between vital statistics and the public health is discussed in the monthly bulletin of the department of health. It has been found that the present system in New York City is inadequate and a committee was appointed by the department of health to consider the subject and to make a report. After pointing out the shortcomings of present methods and showing the many ways in which accurate vital statistics would be useful the report makes the following recommendations:

1. Divide the city for the purposes of tabulation into small sanitary districts, the boundaries of which should coincide wherever possible with those of the 708 40-acre tracts of the Census Bureau.
2. Tabulate the deaths, births and marriages in the city in 1910 and subsequent years by these tracts.
3. Establish a working agreement with the Census Bureau regarding the tabulation of deaths and births to be made by each, in order to avoid duplication.
4. Estimate the cost of producing each statistical table now published by the bureau, and consider whether the same amount of money might be made to yield a better return to the city by changing the character of the table.
5. In selecting subjects for statistical investigation emphasize those on which the attention of other divisions of the Department of Health is concentrated and those in regard to which public interest has been or can easily be aroused.
6. Plan to have the state enumeration of 1915 taken with reference to serving as a basis for the vital statistics of this city by adding to the schedule certain questions of local value, as has been done to great advantage in several foreign capitals.

The committee suggests that the name of the present Bureau of Records be changed to the Bureau of Vital Statistics and be organized in taree divisions: Records, Research and

Publicity. The members of the committee framing the report are: Prof. Walter F. Wilcox of Cornell University, consulting statistician of the New York State Department of Health; Prof. C. E. A. Winslow of the College of the City of New York, formerly connected with the Massachusetts Institute of Technology; Dr. Cressy L. Wilbur, chief statistician of the Federal Department of Commerce and Labor, and Dr. Robert S. Tracy, who retired as register of records in the department of health in 1901, after thirty-one years' services. From the department of health, Dr. William H. Guilfoy, register of records, and Dr. Hermann M. Biggs, general medical officer, and Dr. S. Josephine Baker, director of the department of hygiene.

NORTH CAROLINA

New Public Hospital.—Winston-Salem has recently voted $100,000, secured by municipal bonds, to be used for the erection of a new public hospital.

Free Antitoxin for Caldwell County.—The commissioners of Caldwell County have instructed Dr. Charles B. McNairy, Lenoir, health officer, to keep on hand a supply of diphtheria antitoxin for those unable to pay for it.

Hookworm Dispensary Opened.—The hookworm dispensary at Scotland Neck was opened, July 27, with Dr. Platt W. Covington, Rockingham, in charge. During the day, 335 applications were received and about forty-eight cases of hookworm were found in the examination of less than one-half the applicants. More than thirty patients were placed under treatment. The dispensary is open every two weeks and at these times patients will be examined and if necessary will be given free treatment.

Personal.—Dr. James J. L. McCullers, McCullers, has been appointed superintendent of health of Wake County by the secretary of the State Board of Health, as the authorities of the county had failed to elect a superintendent as provided by law.——Dr. James M. Templeton, Carey, has been elected first vice-president of the National Farmers' Union of America.——Dr. Charles A. Woodard, Durham, has started for Europe.——Dr. Louis Booker, Charlottesville, Va., has been appointed assistant resident physician to the State Tuberculosis Hospital, Montrose.——The building occupied by Dr. Edward P. Snipes, Jonesville, was destroyed by fire, July 26. ——Dr. Thomas A. Mann, health officer of Durham, has resigned. At the last meeting of the Durham Medical Society, resolutions commending the work done by Dr. Mann were unanimously adopted.

NORTH DAKOTA

State Board Elects.—At the annual meeting of the State Board of Medical Examiners held in Fargo, July 31, Dr. Paul Sorkness, Fargo, was elected president, and Dr. George M. Williamson, Grand Forks, secretary.

New Dean for Medical College.—Dr. Harley E. French, for four years professor of anatomy at the University of South Dakota, Vermilion, has been appointed dean of the faculty and professor of anatomy at the University of North Dakota, Grand Forks.

PENNSYLVANIA

Bequest.—The will of the late William Alexander Smith, for many years president and treasurer of the New York Stock Exchange, bequeaths $3,000 to the Pottstown Hospital.

Hospital Additions.—Work on the erection of a dispensary for the Medico-Chirurgical Hospital on Cherry Street, west of Seventeenth, was begun August 17. It is to be a one-story structure 59.7 by 146 feet and will cost $20,000.——St. Christopher's Hospital, Lawrence and Huntingdon Streets, is building a two-story addition at a cost of $1,000.

New Hospitals Opened.—The J. C. Blair Memorial Hospit l Building, Huntingdon, completely equipped and furnished, was opened for inspection August 24, the physicians' and press day. After examination of the hospital, a buffet lunch was served and in the afternoon addresses were given by Drs. Francis P. Ball, Lock Haven, and Theodore L. Chase, Philadelphia, and a press representative. The public will be allowed to inspect the building from August 26 to August 30, and the hospital will be opened to receive patients September 4.

Typhoid on the Decrease.—According to the records of the bureau of health for the week ending August 19, there were ten deaths from typhoid fever, but the number of cases reported was fifty-six as compared with sixty-four for the preceding week. Of the present week's total, fourteen cases were reported from the Thirty-Second Ward and investigation by the inspectors of the health bureau showed that the cases were contracted from milk infection. The cause was traced to a dairy outside of the city and Chief Vogelson reported the result of the investigation to the State Health Commission and the dairy was closed.

Reduction of Tuberculosis Death-Rate.—Dr. Thomas H. A. Stites, chief of the division of dispensaries of the State Department of Health, in a paper read before the Sixteenth Censorial District Medical Society, held at Montrose, August 15, declared that Pennsylvania had the lowest death-rate from tuberculosis during 1910 of any of the five middle states. He stated that the average number of deaths during the year from all causes in the states of Maryland, Massachusetts, New York, Ohio and Pennsylvania was 408,050, of which 42,075, or 10.3 per cent. were due to tuberculosis. Pennsylvania reports the lowest percentage, 8.6 per cent. from this cause.

Reading Promises Refrigerator Service.—On August 10, the State Railroad Commission concluded a hearing of complaint against the Reading Railroad by a local milk dealer, who is seeking to compel that road to transport milk to the city in refrigerating cars, by deciding that no recommendations would be made until the producers and shippers of milk should have a hearing, and to accomplish this sent invitations to 2,000 milk producers within a radius of 60 miles of the city. In the meantime a conference was held between John F. Auch, general freight traffic manager of the Reading Railroad and a committee of the Interstate Milk Producers' Association and assurances were given by the railroad that refrigerator car service will be furnished to shippers of milk to Philadelphia, beginning next spring.

Freedom from Water Pollution.—The waters of the state of Pennsylvania under enforcement of the purity of water law in 1905 are being freed from pollution. Phoenixville, the last town on the Schuylkill, taking an unfiltered supply of water from that river, has now submitted plans for germicidal treatment of the water pending the submission of comprehensive plans for a modern filtration plant. Lebanon has prepared plans for a sanitary system of sewers and sewage treatment plant and has appropriated funds for the construction of these improvements. Plans have also been drawn for a complete sanitary sewerage system and treatment plant for the borough of Middletown. In Lancaster, extension of the water filter plant are necessary on account of the increasing population of that city. Ligonier has been compelled to build a sewage treatment plant and its work is now in progress. Sunbury has been refused permission to extend its sewers until prior decrees of the commission of health which ordered sanitary improvements, have been obeyed. Jersey Shore is to have a new pumping station and intake, germicidal treatment of the water and a large storage reservoir. Lock Haven is also about to build a new dam and a large storage reservoir. Renovo, which owns its own water works and sewer systems, is extending and improving both. Palmerton, the headquarters of the Pennsylvania Zinc Company, is enlarging the sewage treatment plant and extending sewers in accordance with plans approved by the department. Danville has submitted plans for a complete sanitary sewer system and for sewage treatment work which has been approved by the State Department of Health. The Muncy Water Company has been cited to show cause why its charter should not be taken away on complaint of the commissioner of health unless forthwith it treats its water temporarily and installs at the earliest moment a modern filter plant. The borough of New Brighton and a chain of municipalities stretching along the banks of the Beaver River have been ordered to provide for an outfall sewer and ultimately for a sewage disposal plant. Harrisburg is expending this season $500,000 for improved sewerage work to take the sewage out of the river all through the major length of the city along the banks of the Susquehanna.

GENERAL NEWS

Unauthorized Subscription Agencies.—THE JOURNAL has repeatedly published warnings against paying money to unauthorized persons who pretend to take subscriptions. All agents of THE JOURNAL who are authorized to receive money carry signed and sealed current letters of identification on the Association stationery. Physicians write of having paid money to the Seattle Subscription Company, Seattle, Wash., and to J. R. Russell of the Twin City Magazine Company, St. Paul, Minn. They receive receipts, but that seems to be all that they receive for the money as none of it is sent to the periodicals for which subscriptions are taken. THE JOURNAL called attention to the Seattle Company not long ago when a man was operating under that name in Montana. It seems that he has been working east and that physicians are still careless about their money.

The Christian A. Herter Memorial Fund.—In the *Journal of Biological Chemistry*, August, 1911, appears an announcement of The Christian A. Herter Memorial Fund. This fund, now amounting to $40,000, has been confided to the care of the directors of the *Journal of Biological Chemistry* under the provisions of a declaration of trust executed by them. The chief aim of the trust is to further the interests of the *Journal of Biological Chemistry*, an instrument for the development of science created by Christian A. Herter and fostered by him up to the time of his death. In the event that conditions arise removing the need for such a use of the income, provisions are made by which the fund shall continue as a memorial of Professor Herter and of service to humanity by the promotion of scientific research. Dr. Simon Flexner, New York, is the president and Dr. A. N. Richards, Philadelphia, the secretary of the directory in charge of the fund.

FOREIGN NEWS

Dr. Herbert Timbrell Bulstrode, medical inspector to the local government board and lecturer on preventive medicine at Charing Cross Hospital Medical School, London, died suddenly at his home in London, July 21, aged 52. Dr. Bulstrode was an arduous and painstaking worker, and the first fruit of his important work was the Milroy lectures delivered in London, before the Royal College of Physicians in 1903, on "The Causes, Prevention and Control of Pulmonary Tuberculosis." He was next commissioned to make especial enquiry into the sanatorium treatment of tuberculosis, the result being the "Sanatoria for Consumption," published by the local government board. His next most important work in the line of preventive medicine was on the spread of diseases by shellfish, and as a result of his revelations, no doubt is left as to the necessity of legislative action prohibiting the sale of shellfish from contaminated sources.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Aug. 12, 1911.

Remarkable Improvement in the Health of London

A remarkable improvement in the public health of London is shown by a recent report issued by the government. During the past year the general death-rate was 13.7; the death-rate from consumption was 1.2; and the number of infant deaths per thousand births was 103. Contrasting these figures with the average for the years 1901-5, the general death-rate was 17; the death-rate from consumption, 1.6, and the infantile death-rate, 139. Thus, the general death-rate has declined 19 per cent.; the death-rate from consumption, 25 per cent., and the infantile death-rate, 26 per cent. A similar improvement is shown in regard to infectious diseases. The number of cases of scarlet fever in the past year was 10,509, of diphtheria 5,494, of typhus 3, and of typhoid fever 1,284. The corresponding figures for the average of the years 1901-5 were 10,509, 8,865, 12 and 2,478. The only disease which has shown some increase is measles. The great improvement in the infantile death-rate is due to the increased regard for infantile hygiene, which is largely the result of the work of "health visitors." The precautions against importation of exotic disease have never been more successfully carried out than at present; although both cholera and plague have from time to time appeared in the Port of London, the infection has never spread. Although, as mentioned in a previous letter to THE JOURNAL, plague rats were found at Wapping, a higher point on the river than ever before, the disease has not spread to man.

Lunacy in England and Wales

The statistics of lunacy for 1910 which have just been issued show that there were 2,604 more certified insane persons in England and Wales at the end of the year than on the corresponding date of the previous year. The corresponding increase for 1909 was 1,766, for 1908 2,703, and for 1907 2,096. For the decennium ending 1910 the average increase was 2,521. Extending the survey backward a continuous increase in insanity is shown. Thus, since 1869 the population has increased by 64.6 per cent., while the number of insane has increased by 150.4 per cent. In 1869 the ratio of the insane to the population was 23.92 per 10,000; on Jan. 1, 1911, the ratio had risen to 36.4. From these figures the conclusion might be drawn that for many years insanity has been increasing. However, the commissioners on lunacy, who issue these reports, say: "The increase in the number of insane recorded year by year is no proof of an actual growth of insanity in the community, although it is often assumed to be such. Such facts as are available tend to the conclusion that if insanity is increasing at all it is doing so very slowly and by no means proportionately to the increasing numbers of insane persons under care." The figures are explained by an increasing accuracy in the diagnosis of insanity and a greater readiness to send patients to asylums, who otherwise would remain uncertified. There is a most interesting discussion in the report of the inheritance of insanity. It is estimated that there are about three insane persons who apparently come from insane stock, for every one with a family history of insanity. But the commissioners insist that these figures cannot be used to minimize the importance of inheritance. They point out that the question is much more complicated. There may be a family history—and, in fact, there are many such histories—in which no positive insanity can be traced, but in which there are evidences of instability of the nervous system due to a large variety of causes, of which alcohol is one of the most important. This instability may manifest itself in many directions apart from actual insanity.

Pharmacists and Secret Remedies

The annual meeting of the British Pharmaceutical Conference has just taken place at Portsmouth. A very important discussion took place on the subject of secret and proprietary medicine. A report was submitted giving the answers received by the conference, to a series of questions addressed to eighty-eight local associations of pharmacists in all parts of the United Kingdom. They all agreed that the sale of secret and proprietary medicines by pharmacists is considerable. Eighty-six per cent. stated that proprietary articles are ordered by doctors in their respective districts to a considerable extent, and of these 20 per cent. reported such ordering to be by verbal recommendation, 20 per cent. by prescription, and 60 per cent. in both ways. In reply to the question, "Would you regard with favor proposals for legislation making compulsory a declaration on the label of all the principal ingredients"? 70 per cent. replied in the affirmative, 24 per cent. in the negative and 6 per cent. were doubtful; 88 per cent. were of the opinion that such legislation would curtail the sale of undesirable quack medicines. In regard to the prescribing of proprietary articles by doctors, the suggestion was frequently made that much greater use should be made of the British Pharmaceutical Codex in prescribing. The discussion was opened by Mr. E. F. Harrison, who referred to the usual mendacious advertisements by which quack medicines were sold. He regarded the great majority of secret remedies having a large sale as possessing a certain usefulness in some of the disorders for which they were recommended, but as frequently advertised by grossly exaggerated and untrue statements. He moved the following important resolution which after discussion was carried unanimously: "That this meeting of the British Pharmaceutical Conference is of opinion that a public inquiry, by a royal commission, a select parliamentary committee or a departmental committee, should be held in regard to the advertising and sale of proprietary secret medicines and the law relating thereto, with a view to further legislation for the prevention of fraud and quackery."

The Plague in India

In his speech on the Indian budget the under-secretary for India made an important announcement on the subject of plague. He thought there was urgent need for the education of the masses of India in the principles of hygiene. Though archaic habits might be tolerable in the open country, when transferred to the crowded town they became unsupportable. If there were less ignorance and less perversity, plague would never have found the lodgement it had. Persons living under proper sanitary conditions were virtually exempt. Plague did not attack the jail population or the native army; it attacked the ordinary civil population because they lived in houses which were not rat-proof and because they treated the rat almost as a domestic animal and refused to kill it. Plague had now been present in India for fifteen years, and the deaths from it had reached the appalling total of 7,500,000. Of this, the Punjab accounted for nearly 2,500,000. In the last ten years, 11 per cent. of the population of that province had died from plague. The vaccine discovered by Professor Haffkine conferred a comparative, though not absolute, immunity for a time. But the unhappy accident at Mulkowal, where several villagers died of tetanus after inoculation gave the treatment a blow from which it has never recovered. The disease was now largely fought by house evacuation, which was easier in villages than towns. Special plague doctors and subordinates were appointed. When plague occurred they visited the locality, offered inocu-

lation and gave assistance to persons to vacate their houses. An improvement in the general sanitary condition of the people had taken place and was being promoted by grants from the government.

The Compulsory Segregation of the Subjects of Venereal Disease

An influential deputation, among whom were eminent members of the profession interested in questions of public health —Sir Victor Horsley, Sir James Crichton-Browne, Dr. F. W. Mott—has presented to the president of the local government board, Mr. John Burns, a petition urging that effect should be given by detention or some form of compulsory treatment, to the recommendation of the royal commission on the poor laws, for the detention in poor-law institutions of persons suffering from venereal disease, when medically certified to be dangerous to others. The petition was signed by a number of well-known ladies representing various associations engaged in philanthropic work, physicians and members of town and borough councils. Sir Victor Horsley and Dr. Mott supported the petition from the medical standpoint and Lord Kinnaird, chairman of the committee of the Lock Hospital, spoke as a life-worker among young men. Mr. Burns in reply quoted figures showing a marked diminution in venereal disease during recent years, and while holding out no hope of legislation empowering detention, assured the deputation that he would by administrative action do all in his power to promote the cure and stay the progress of venereal disease.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, August 4, 1911.

Suture of the Abdominal Aorta

The Académie de médecine has adjourned until October 3. At its last session Dr. Routier, surgeon of the hospitals of Paris, reported a case in which the abdominal aorta was sutured. A diagnosis of hydatid cyst, based on the reaction of Weinberg, was made on a young man of 24 who complained of pains in the left hypochondrium. In the course of the operation it was ascertained that the tumor was in reality a solid one covered by a very vascular membrane adhering to the aorta. It was enucleated with great difficulty and the tags of the enveloping membrane were clamped off by forceps. One of the last adherent points was clamped off and the tumor removed. Each pair of forceps was successively replaced by a ligature. At the moment of tying the last one, a jet of blood burst into the surgeon's face. Compressing the aorta with his left hand, Dr. Routier placed on the orifice in the aorta, which was as large as a brachial artery, two hemostatic forceps which stopped the hemorrhage. But this was considered only an emergency measure and it was to be expected that on the removal of the forceps a fatal hemorrhage would ensue. A second operation was, therefore, necessary and on the next day the patient was anesthetized. With needles threaded with fine silk an attempt was made at first to pass a ligature behind the forceps but the needle and the thread broke. Taking then the needle of Reverdin, which is used in intestinal sutures, Routier passed a catgut suture into a fold of the aorta under the forceps and tied it. The two ends of the suture were then passed around and tied solidly under the two forceps. Success was complete. No blood ran when the forceps were withdrawn. A fragment of the epiploon nearby was placed over the ligature and the abdomen was closed. All went well; there was a temperature of 37 C. (98.6 F.) and 78 pulsations to the minute for eight days. In the night of the eighth day after an abrupt movement there was a kind of demisyncope, pain in the abdomen, facial pallor, perspiration of the skin and thorax. A secondary hemorrhage was thought of. This passed, however. The patient finally died on the sixteenth day. It was impossible to ascertain the cause of death, as autopsy was not permitted. This seems to be the third case of suture of the abdominal aorta.

Vaccination Against Typhoid Fever

The minister of war, M. Messimy, has entrusted to Dr. Chantemesse, professor at the Faculté de médecine de Paris, and Dr. Vincent, professor at the Ecole d'application de médecine et de pharmacie militaires du Val-de-Grâce, the task of applying among the troops on the Algerian and Moroccan frontier the method of antityphoid vaccination. This decision was taken in response to a resolution of the sanitary service of the province of Oran submitted by medical inspector Février, director of the sanitary service of the army to the consultant commission on military hygiene and epidemiology, which voted its approval. As in the armies of other countries, this vaccination will be entirely facultative.

The Dogs of the Sanitary Service

The use of dogs in the relief of the wounded was recently tried at Vincennes in the course of instruction of the sanitary service of the military government of Paris. Several men who were supposed to be wounded were hidden in various places on the plain. All the pseudo wounded were found in a few minutes. The trial was made as follows: The dog is sent off by his master in a given direction at various distances; he aids the wounded, takes his kepi and brings it back. The dog leads or, one might say, drags his master immediately to the spot where he found the wounded man without hesitation. In default of the kepi the dog hunts with his paw or his muzzle in the wounded man's pocket and takes his handkerchief, glove or some other object showing the identity of the man.

The importance of the use of such dogs is readily understood. Wounded men exposed for a long time on the field of combat may be exposed to attacks of birds of prey and in our colonial expeditions several have undergone frightful mutilation by the natives. The methods of combat, the arrangement of the troops during battle over a more or less extent of territory, modern long-range fire-arms, night battles —all these make the work of the ambulances very difficult. The number of men who disappear is always large because the relief of the wounded during action becomes constantly more difficult. The wounded who are too weak to call or to leave their shelters are abandoned unless the orderlies are accompanied by dogs who are used to searching for the wounded. It seems, therefore, that it is necessary for modern armies to possess dogs trained in the sanitary service.

The New Hôpital de la Pitié

The new hospital built to replace the old building of the hôpital de la Pitié has just been opened. It is a model building established at the cost of 11,000,000 francs (about $2,200,000) and comprises thirty-two medical and surgical buildings.

The Physician Not Always Obliged to Continue the Care of the Patient

While it is true that the obligation of a physician to respond to a patient's call is one imposed by conscience solely, the case is altogether different if the physician abandons his patient at a critical moment when his retirement may endanger the life and health of his patient. A Paris tribunal has recently decided, however, that the withdrawal of the physician is justified in some instances. The case which elicited this opinion was that of an obstetrician who withdrew because the patient or those around her were determined to select a nurse whose antecedents were unknown to the physician. The court held that this physician, in renouncing the responsibility and the fees of confinement acted honorably and was in a position to demand damages on account of the injury to his professional reputation through the unjustified action of his patient.

DRESDEN LETTER

(From a Special Correspondent)

International Hygiene Exhibition

DRESDEN, July 28, 1911.

A visit to the International Hygiene Exhibition at Dresden brings a number of surprises. First, one is surprised that in an exposition supposed to be international in character, the catalogues, explanations, labels, etc., are practically all in German. It was surely not too much to expect to find the labels and abbreviated catalogues in French and English.

Second, one is surprised that so large a proportion of the exhibition is commercial in character, containing much that is only remotely, if at all, connected with hygiene. While it is primarily a hygienic exhibit, apparently nothing has been refused admission that would help to make the exhibition a financial success. There are, as might be expected, many beer gardens over the ground, tobacco stores and the like. There are numerous "Coney Island" attractions and ingenious means of attracting the nimble penny. Photographing, copying or reproducing any of the exhibits is forbidden. The right to photograph was let to one photographer, who I was told gave 20,000 marks ($5,000) for the monopoly. Needless to say the enterprise long ago paid for itself.

The English-speaking nations are poorly represented in the exhibit. Great Britain was late in opening her exhibit, which though excellent in many ways, is hardly commensurate

with the splendid sanitary achievements of that country. This is probably owing to the reluctance of the British Government to make an appropriation for the Dresden Exhibition, notwithstanding the fact that the British colony in Dresden had raised a handsome purse as a starter.

And the United States! There is nothing whatever to indicate that there is such a country. The only exhibit from the American continent is a small one from Brazil. The French, Swiss, Austrians, Russians and Spanish all have exhibits. The Japanese have an admirable exhibit, and one naturally recalls the difference in the medical management of the armies in the Spanish war and in the Russo-Japanese war. Not that American physicians were not alive to the importance of hygiene and sanitation, but the non-medical "men above" had not learned the lesson. Too much red tape, in fact. This characteristic and the indifference of our government officials to health matters may explain the failure of our physicians and sanitarians to obtain an appropriation for Dresden.

One is amazed at the completeness and the excellence of the educational and scientific exhibits. The care and expense involved in the preparation of the exhibition are extraordinary. Explanations have been made and demonstrations installed in order to make plain to the man in the street the anatomy and histology of the body, the functions of the organs, the needs of the body in food, air, exercise, clothing, etc., and yet any physician will find well spent the time he spares for a study of the health exhibit. The composition of the body, of the blood, of various food substances, of the excretions, etc., are shown by means of jars containing the exact amount of each constituent in a manner much more impressive than can be done by means of charts. Similar exhibits have been made elsewhere, but perhaps not to the same extent as here. One physician, a German, passing through the exhibit stated that it took him years to learn what here he might obtain within a few months. There must be at least 100 compound microscopes, some of them binocular, exhibiting tissues, cell growth and microscopic life; and there are many stereoscopes of the new type, adjustable for pupillary width (which sell here for about $14.00). There are admirable papier maché and wax figures of the human body and its parts, and an excellent series (in wax) of skin diseases, including the exanthems, and syphilis and lupus. There are exhibitions of beds for the sick, bath apparatus, healthful clothing, ventilating and heating systems, etc. The effort has been made to demonstrate the evil effects of tobacco, alcohol and other narcotics, corsets, tight shoes and the like. The care of infants and children, the value of exercise, care of the health in old age, the importance of proper nutrition, have been carefully shown with a view of making the exhibit of real value to the general public, who, by the way, throng the buildings and the grounds in the afternoons so densely as to make it inconvenient to get around. There are motion picture exhibits of silk-worm culture, the protective agencies of the blood (a magnificent representation of the clumping of bacteria in the blood), etc., the projection of microscopic life, and stereopticon lectures. Infectious diseases, tuberculosis and tropical diseases have had due attention. But to particularize is only to omit other features fully as good. This is certainly an exhibit of which the Germans may feel proud.

BUDAPEST LETTER

(From Our Regular Correspondent)

BUDAPEST, Aug. 7, 1911.

Ancient Jewish Hygiene in the Dresden Hygiene Exhibition

Having spent my holiday in Dresden, I found many things of interest in the wards of the Jewish section, which attracted my attention with its descriptions of ancient hygienic institutions and laws approaching in perfectness many an institution and law of to-day.

The exhibition in Dresden devoted two spacious halls to the exhibits of the sanitation of biblical, ancient and medieval Jewry.

The thora being the foundation of the Jewish hygiene, a good part of the biblical and ancient class is occupied by the exhibition of thoras. Much attention is paid by the visitors to a thora about 1,000 years of age, written on red leather.

The walls are covered with Hebrew and German texts of Moses' hygienic laws. The inside of the hall is occupied by a plaster cast of King Solomon's lakes and water-works. Here we find books, drawings and plans on the water supply of biblical Jerusalem, ancient Jewish residences and reliquiæ found at excavations. Bricks, roofings, walls and fountains, drainings, sewers for the removal of droppings and photographs of household utensils are here in a great abundance.

A separate group deals with the housing, showing an evolution from tents to houses of mud and later of stone. The type of the ancient houses has scarcely changed in comparison with the houses of Palestinian and African Jews, or the tents of some nomad tribes.

Another group deals with the rules to be observed in eating and drinking. The customs at meals can be seen on plaster models. Here are pictures of old ovens, fireplaces, grain store-houses, models of flour mills and the reliquiæ of original grain-crushing stones. In contrast to these ancient things, we see exhibited the present foods, dishes and household tools of native Palestinian and African Jews.

In the medieval class the walls are covered with quotations from the Talmud, as the source of sanitary laws. One case is full with special instruments and apparatus for circumcision. One or two among them are real masterpieces of art. The series of circumcising instruments is most interesting, commencing with a knife, the handle of which is ornamented with rubies and diamonds, and ending with a simple knife suitable for being boiled and sterilized. Another case contains the sick nursing instruments which every parish had to procure for itself.

The ritual handling of the dead is represented by plastic models. This is supplemented by a collection of grave-stones and burial requisites.

An important feature of medieval hygiene of the Jews was the public baths. Here are bathing and washing requisites, together with a collection of hand-washing basins.

The management of meat is instructively illustrated by a series of pictures, showing the processes from the salting of the meat to its being dished up. A plaster cast shows the humanity of ritual slaughtering and the brutality of killing an ox with a blow. An anatomic preparation shows the bloodless heart of the animal, beside it, the killed animal's heart full of blood.

The exhibition is finished with a room furnished and fitted up entirely with original ancient furniture; a laid table awaits the advent of the Sabbath.

This Sabbath awaiting room, apart from its interesting historic and folk-lore aspects, stands as an expression of the social thinking of an ancient people, who made it a law to have rest on the seventh day of the week.

In the modern sections of the exhibition we meet with names of Jews from every land prominent in the domain of medical and hygienic sciences. Among them are Birch-Hirschfeld, Born, Cohnheim, Fränkel, Gärtner, Remák, Hebra, Schwalbe, Weigert, Ascher, Askanazy, Kronecker, Loeb, Hein, Izrael, Munk, Pollitzer, Fuchs, Haffkine, Koplik, Senator, Marmorek, Metchnikoff, Weil, Ehrlich, Wassermann, Landau. This list shows that the special Jewish hygiene and sanitary education of biblical and ancient times has not passed away without traces.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Aug. 3, 1911.

Personal

Professor Reichenbach of Bonn has received a call to succeed Professor von Esmarch as director of the Hygienic Institute at Göttingen.

Professor Weber, formerly director of the medical clinic at Halle, celebrated the fiftieth anniversary of his doctorate.

Professor Jamin of Erlangen and Professor Umber of Altona have been nominated, neither one being given a preference, to succeed Professor Gerhardt in Bern.

Prohibition of Weapons to Students

In view of the numerous accidents which are caused by the hasty use of firearms by students, the Prussian school authorities feel obliged to issue a general prohibition of weapons for students of the higher schools. Every student who is found in possession of any kind of firearm or ammunition will be punished by expulsion from the school.

The Position of Physicians in the Criminal Statutes

In Germany there exists the peculiar state of affairs that, according to the construction of the criminal statutes, the physician is threatened with punishment even for professional treatment that is carried out according to established rules. A surgical operation which is undertaken without the express consent of the patient may, for instance, be treated as a bodily injury and the physician may be convicted on account of it. Inasmuch as at present a new criminal code is being prepared, physicians are bestirring themselves to have the

paragraphs which threaten their professional activity removed or so modified that their construction will be less dangerous. On account of the importance of this matter the last Deutsche Aerztetag took it into consideration. The committee to whom the reports were referred, presented the following propositions which were adopted by the Aerztetag:

On account of the inclusion of medical professional treatment under the sections "Crime and attempts on the life" and "Bodily injuries," a legal uncertainty is produced which makes the business of the physician difficult and which is injurious to the public health. The Aerztetag expresses its opinion that treatment by a physician when it is conducted according to the rules of medical science and art should not fall in the criminal classification of premeditated bodily injury. The Aerztetag recommends the addition to the preliminary paragraphs of the criminal code, the following statement: "A person shall not be punishable who undertakes any action for the saving of a person or the property of himself or that of another from a present danger for which he is not responsible, and which cannot be removed in a more appropriate way, except when the danger is only slight or involves only the saving of property, unless the damage to be expected from the operation is disproportionately greater than the danger. One is not punishable who undertakes to save a person from a present danger not to be removed in a more suitable way than by an operation on the person himself, except when the danger is only slight."

To Limit Advertising Intended for the Laity

In Germany there exists the custom (less common in your country) of drug manufacturers advertising medicinal preparations, not only in the medical press, but also in the daily papers. Other firms place in the circulars accompanying their specialties recommendations of other remedies. The last Aerztetag has passed a resolution against this advertising business which favors self-medication by the public.

Average Length of Life of the German People

From the death-rates which give the number of deaths per 1,000 births at the end of the first, second, third, etc., year of life, the length of life, that is, the whole number of years that these 1,000 persons have lived, is obtained; this sum divided by 1,000 gives the average length of life for the individual. This number is called the average length of life. From the three published mortality tables for the entire German people, the following average life duration can be calculated: From 1871 to 1880, for men, 35.58 years; for women, 38.45; from 1881 to 1890, for men, 37.17; for women, 40.25; from 1891 to 1900, for men, 40.56; for women, 43.97. The average for men has risen 5 years in the last twenty years, that for women five and one-half years. Still Germany is behind many other European countries. In Sweden, the average length of life is about ten years higher than in Germany, in Belgium and the Netherlands about five years, and in France and England about four years. The chief reason for this difference lies in the considerable infant mortality of Germany.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Aug. 9, 1911.

An Embryo Found in an Elephant in the Vienna Zoological Garden

A few days ago the female elephant in the Vienna Zoological Garden died after having been ill for some weeks. The interesting patient had been treated by two professors of the Vienna veterinary high school. The predominant symptoms of the disease were anorexia and frequent attacks of what may be called swooning fits. When the animal died, it was examined by representatives of the museum of natural history, of the anatomic institute and the veterinary high school. A regular post-mortem examination was made, and it was a very difficult task, for the body weighed 1½ tons even after the enormous loss of blood. The most interesting finding of the necropsy was an embryo, completely developed as to macroscopic appearance, measuring 65 cm. and apparently 11 months old, thus lacking another eleven months to its maturity. This uncommon specimen was taken possession of by the anatomic institute. The mother elephant was found to have suffered from chronic gastro-intestinal inflammation with ulcerations of the anterior wall of the stomach. A detailed account of the findings will be published soon, while a good deal of the material obtained will need to be studied and worked up later on.

The Spread of Cholera in Austria

Since writing the last time about the appearance of cholera in this country (THE JOURNAL, June 24, 1911) the disease has claimed in Trieste, our chief port, over twenty victims. The infections were all traced to steamers coming from Italy, and in spite of very strict and careful precautions a spread could not be prevented. As it appears now, there are several foci from which the various cases of the disease have originated in the city. Much bitter comment has been heard concerning the attitude of Italy, in not reporting the presence of cholera in its districts to the other governments, as it ought to have done according to the last cholera convention. It is said here of Italy that actual cases of cholera have been officially "diagnosed away," so as not to prevent the influx of visitors to the country and the two exhibitions. In Austria, as soon as the cases occurring on board ships were traced to the neighboring country, the commercial traffic was placed under careful control. But before the measures went into effect, infection had taken place in several different localities. It is interesting to note that all cases observed afterward were among those persons who were under control as "suspects," having been found to be "carriers of vibrios," at the routine examinations of all persons in contact with a definite cholera patient. Therefore, the hope of the board of health that the outbreak will soon be suppressed is justified. Another source of danger of infection is the *Hinterland* of the Austrian coastline, where just now the Turks are fighting the Albanian tribes. Cholera has been found there too, and the low sanitary standard of these people means a real menace to that part of Europe. Therefore, the Austrian government has sent down a number of well-equipped physicians to these districts.

A Special Prize for Austrian Physicians

Two French practitioners, Dr. Meussand and Dr. Rivier, have notified the senate of the University of Vienna that they have placed at the disposal of this body a sum sufficient to yield yearly an interest of 1,000 francs ($200) for the purpose of sending an Austrian physician to Paris. The candidates must not have obtained their diplomas longer than four years ago, and must spend the prize in Paris, staying there at least three months in the hospitals pursuing scientific objects. The prize is granted in two equal sums, at the beginning of the Paris stay and six weeks later, respectively. This unusual but most welcome grant is intended to promote more intimate relations between the two famous continental medical schools, Paris and Vienna. At present, there is hardly any connection between the two save occasional visitors during the international congresses.

Effects of Agrarian Prohibition Tariffs on Meat Imports

The influence of our great agrarian proprietors on legislation is very powerful, and their political preponderance was the chief reason that some ten years ago a tariff was introduced in Austria making the importation of meat and living animals into this country impossible, because unprofitable. But owing to the constant rise in prices on all articles of food, frozen meat was imported this year from South America in limited quantities. It sufficed to show that it is possible to procure from abroad wholesome and healthy food at a considerably lower cost to the consumer. No sooner was this evident, than the landowners again exerted their influence to stop further importation of frozen meat. They succeeded. But then the population, especially the poorer part of the rural population, brought all influence to bear on the government to obtain cheap food. Medical men were at the head of the movement which wanted to "open the frontiers." They pointed out how much underfed the population is at present, and how much the consumption of meat per capita has decreased within the last few years in all Austrian towns. And they pointed out, too, how national defense would suffer, and has suffered already, because the recruits, underfed as they are, become less and less fit to be enlisted in the army. This latter argument seems to have had effect on the government, for now a commission for studying the problem of food has been appointed. But a more substantial gain is the permission for the importation of a certain quantity of frozen meat, which was wrested from the government. Once obtained, this concession will no doubt be necessarily increased, with or without the permission of the landowners. A similar conflict has broken out with regard to the supply of milk. Here the dairymen try to create a ring or a trust to push the price of milk to a higher level. The violent indignation of the urban population has for the moment averted the danger.

Marriages

CHARLES MARTIN STROTZ, M.D., Philadelphia, to Miss Estella Erwin of McVeytown, Pa., at Cristobal, Canal Zone, August 2.

BURT D. HARRINGTON, M.D., Flatbush, L. I., to Mrs. Florence Omlsted Randall of Hackensack, N. J., August 2.

ARNOLD BURKELMAN, M.D., to Mrs. Mary J. Lindsay Schallert, both of Los Angeles, Cal., August 17.

EDWIN HOLLAND TROWER, M.D., to Miss Catherine Elizabeth Rush, both of Eastville, Va., June 28.

JAMES N. SHEARL, M.D., Middletown, Ill., to Miss Bertha M. Nicholson of Tower Hill, Ill., August 2.

IRA STANLEY POPE, M.D., Chevy Chase, Md., to Miss Marie M. Spatola of Philadelphia, August 9.

JAMES EDWARD ALLGOOD, M.D., Liberty, S. C., to Miss Ruth Thompson of Inman, S. C., June 20.

ELISHA B. JACKSON, M.D., to Mrs. Lydia Ward-Hubbard, both of Aberdeen, S. Dak., July 31.

JAMES M. DELEVETT, M.D., Baltimore, to Miss Mary E. Fitzhugh at Philadelphia, August 9.

FRED C. JORDAN, M.D., Lewis, Iowa, to Miss Berma Bland of Des Moines, August 2.

Deaths

Alvin Allace Hubbell, M.D. University of Buffalo (N. Y.), 1876; one of the most prominent specialists on diseases of the eye of western New York and a prolific writer, died in Buffalo, August 10, of general arteriosclerosis, aged 65. After graduating with honors from the University of Buffalo, he studied diseases of eye under the late Dr. Samuel D. Gross in Philadelphia for more than a year, and then began his practice in that specialty in Buffalo; his ability was at once recognized and his practice rapidly increased. After his graduation Dr. Hubbell was made professor of ophthalmology in the Niagara University, Buffalo. In 1898, when this institution became consolidated with the University of Buffalo, he became professor of the same specialty in the latter school, and in the spring of 1911 he was made emeritus professor of ophthalmology. For several years Dr. Hubbell was surgeon to the Charity Eye, Ear, Nose and Throat Hospital, the Sisters of Charity and the Erie County Hospital. He was also oculist to the Lake Shore and Michigan Southern Railroad. He was a member of the American Medical Association, chairman of the Section on Ophthalmology, 1908-1909; one of the founders of the Buffalo Ophthalmological Club; president in 1908 of the American Ophthalmological Society and a member of the American Academy of Ophthalmology and Oto-Laryngology. He was the author of a number of articles bearing on his specialty, and in 1908 published a volume entitled "The Complete History and Development of Ophthalmology from 1800 to 1870."

Blencowe E. Fryer, M.D. University of Pennsylvania, Philadelphia, 1859; colonel, medical corps, U. S. Army, retired; one of the most prominent ophthalmologists of the southwest; died at Marquette, Mich., August 13. At the outbreak of the Civil War, Dr. Fryer entered the Army as assistant surgeon and passed through the successive grades to lieutenant colonel before his retirement in 1891, and received his promotion to colonel retired in 1904. While he was stationed at Fort Leavenworth, Kan., Major Fryer was called to the chair of ophthalmology in Kansas City Medical College, and was made permanent professor of that branch ten years later, and thereafter confined his medical work to diseases of the eye and ear. He was a member of the American Academy of Medicine, American Ophthalmological Society, American Academy of Ophthalmology and Oto-Laryngology; Association of Military Surgeons of the United States, and was associate editor of the American Journal of Ophthalmology. Dr. Fryer was a surgeon of skill and judgment and a student of medical science of rare acumen and originality, and his death is deplored by his many friends, both in and out of the profession.

Joseph Thatcher Woods, M.D. University of Michigan, Ann Arbor, 1855; major-surgeon of the second division, Twenty-Third Corps, United States Volunteers, during the Civil War; thereafter for several terms health officer of Toledo and a member of the faculty of Toledo Medical College and Western Reserve University, Cleveland, and a member of the surgical staffs of St. Vincent's and the Toledo Hospital; died at the home of his sister in Washington, D. C., August 5, aged 84.

Stephen Pierson, M.D. College of Physicians and Surgeons, New York City, 1869; a member of the American Medical Association and New York Academy of Medicine; surgeon to All Souls and Memorial hospitals, Morristown, N. J.; a veteran of the Civil War; president of the Morristown Board of Education and vice-president of the Washington Association of New Jersey; died at his home in Morristown, August 10, from heart disease, aged 66.

James A. Lewis, M.D. New York University, New York City, 1869; for many years a practitioner of South Buffalo, N. Y.; formerly health commissioner of Lockport, N. Y., and president of the Lockport Tuberculosis Committee; for five years in charge of a hospital at West Seneca, N. Y.; died at his home in Lockport, August 3, from hemorrhage of the stomach, aged 63.

John Chapman Davie, M.D. University of California, San Francisco, 1865; premier and attorney general of Vancouvers Island while it was a crown colony, and later governor and premier of British Columbia; one of the oldest and most eminent surgeons on the Pacific Coast; died at Oak Bay, August 10, from tuberculosis, aged 67.

Albert Steinrauf, M.D. Barnes Medical College, St. Louis, Mo., 1898; ever since his graduation in the United States employ in the Philippine Islands, and for the last six years of the Canal Zone; died at the home of his parents in St. Charles, Mo., August 5, from tropical disease of the liver, aged 33.

William Hope Davis, M.D. Eclectic Medical Institute, Cincinnati, 1865; a veteran of the Civil War; two terms secretary of National Eclectic Association; for many years a practitioner of Springfield, Ill.; died at his home in San Antonio, Texas, August 5, aged 73.

George W. Sayles, M.D. University of Buffalo, N. Y., 1894; a member of the Erie Railway Surgeons' Association and local surgeon of the Erie, New York Central and West Shore railroads; died at his home in Buffalo, August 6, from tuberculosis, aged 44.

George H. Fox, M.D. Castleton (Vt.) Medical College, 1851; a member of the Vermont State Medical Society and one of the founders of the Rutland Medical Club; died at his home in Rutland, July 28, from disease of the intestines, aged 81.

J. Solomon Smith, M.D. University of Louisville (Ky.), 1880; a member of the American Public Health Association; for thirty years a practitioner of Denver; died in Excelsior Springs, Mo., August 3, from nephritis, aged 60.

Alexander Doull Sinclair, M.D. Harvard Medical School, 1867; formerly of Boston and later a practitioner of Kiel, Germany, and since his retirement a resident of Florence, Italy; died at his home in that city, August 7.

Thomas D. Williams, M.D. University of Pennsylvania, Philadelphia, 1885; for several years local surgeon to the Pennsylvania Railroad at Jersey City; died at his home, August 4, from ptomaine poisoning, aged 55.

Elbridge A. Thompson, M.D. Castleton (Vt.) Medical College, 1852; of Dover, Maine; formerly a member of the state legislature; died suddenly at Isle of Springs, Maine, August 2, from heart disease, aged 84.

Nathan Johnson Davis, M.D. Harvard Medical School, 1871; died at his home in East Somerville, Mass., where he has practiced for more than forty years, August 8, from heart disease, aged 67.

John Garfield (license, Massachusetts, years of practice, 1894); for more than forty years a practitioner of Malden; died at the home of his daughter in Everett, Mass., August 5, aged 76.

Walter W. Lester, M.D. Louisville (Ky.) Medical College, 1892; a member of the Kentucky State Medical Association; died at his home in Paintsville, Ky., August 7, from typhoid fever.

Warren W. Drake (license, Ohio, years of practice, 1896); for forty-eight years a practitioner of the state; died at his home in Findlay, August 6, from cerebral hemorrhage, aged 70.

Oliver H. Babcock, M.D. University of Buffalo, N. Y., 1861; for nearly half a century a practitioner of Hammondsport, N. Y.; died at his home in that city, July 29, aged 77.

Worthington W. Hopkins, M.D. University of Maryland, Baltimore, 1858; died at his home in Gover's Hill, near Havre-de-Grace, Md., August 4, aged about 74.

Brayton Muscott, M.D. University of California, San Francisco, 1896; of Friday Harbor, Wash., was accidentally shot and killed, August 6, aged 39.

Charles Eddy, M.D. Bellevue Hospital Medical College, 1873; died at his home in Brooklyn, August 10, aged 62.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

TABLET MEDICATION AND THE PUBLIC

There is no denying the fact that the tablet form of medication has manifest advantages; its convenience and accuracy are alone sufficient insurance that it has come to stay. But these advantages are also potent for much harm, in that they appeal to the non-medical no less than to the medical man, and thus become a great inducement to self-medication. The man who wishes to be his own physician is especially well satisfied with a preparation which calls for no prescription, but can be obtained at the drug-store and taken without the need of glass or spoon. Many tablet manufacturers stamp their initials on their tablets, or make them of a distinctive color or shape; this is done, so they say, to prevent substitution on the part of dishonest pharmacists. While firms may be justified in protecting their interests by adopting a general mark or device to identify tablets of their make, there is no justification for the plan followed by some of giving a particular shape or a particular color to each combination. Such a device can have but one object in view, namely, to bring prominently before the patient the individuality of the medicine he is taking. That this may lead the patient to injure himself or others by the careless use of highly poisonous drugs goes without saying.

Our attention has been called recently to a particularly dangerous form of advertising. A firm has put on the market a bichlorid of mercury tablet, each tablet containing 7½ grains of mercuric chlorid and these are sold under the catchy name "Clover Antiseptic Tablets." Not only are these tablets sold under an innocent-sounding title, but the public safety is still further disregarded by their being made in the shape of a clover leaf. The good fortune supposed to attend the clover leaf would not only prove attractive, but would also lessen the sense of danger because of the supposed harmlessness of vegetable remedies.

The abuse of the corrosive sublimate tablet has borne bitter fruit in accidental poisoning by the use of this substance under the titles of antiseptic tablets, disks, wafers, etc. There is much to be regretted by both the physician and the pharmacist in the history of the employment of mercuric chlorid. The day of its indiscriminate use by the medical profession has long passed, but the knowledge gained by the public from tablets inadvertently placed in their hands by physicians or recommended by druggists has led to their use, especially for the prevention of conception, with disastrous results. Several cases have recently come to notice in which the victim or her consort placed the undissolved tablet in the vagina with fatal effect.[1] The use by the public of such tablets in vaginal douches for the same purpose has been the cause of death[2] in several cases.

In the interest of public safety, physicians should do their utmost to discourage the indiscriminate use of corrosive sublimate tablets. They should particularly avoid those which, because of their non-descriptive, catchy title or distinctive shape are liable to be used by those ignorant of their dangers.

LAY APPRECIATION OF EXPOSURE OF MEDICAL FRAUDS

The Poughkeepsie (N. Y.) *Eagle* comments editorially as follows: "The American Medical Association is doing good work by giving extra publicity to the exposures of fake cures that have been made and clinched through prosecution by the government for fraudulent use of the mails. This publicity is not only through THE JOURNAL of the Association, but stories of some of the more notorious frauds are published in pamphlet form. 'The Rupert Wells Cancer Cure Fraud' is the latest of these we have seen. The story of how such quack remedies deceive hundreds of ignorant people, and some of fair intelligence, is not without touches of human interest, and seems to us to show that here is a department where more government supervision and regulation would benefit many people."

1. THE JOURNAL A. M. A., April 9, 1911, pp. 1203 and 1459.
2. THE JOURNAL A. M. A., April 30, 1910, pp. 1459, 1867; also Am. Jour. Obst., March, 1911, p. 473.

"NEW REMEDY" STAGNATION

An article by Professor Biderfeld in the *Deutsche medizinische Wochenschrift*, June 22, 1911, p. 1153, on the remedies introduced during the last year, begins by discussing the dearth of new discoveries in medicines. The author recalls that in an article published last year he stated that stagnation in the discovery of new remedies was a characteristic of the present time. This stagnation becomes apparent by the substitution for remedies based on really new ideas, medicaments elaborated by slight variations of old ideas or even of mixtures of well-known remedies. The author further notes that the same conditions have prevailed during the past year. That this stagnation is felt seriously in Germany is shown further by an advertisement which appears in another German medical weekly in which it is stated that a large firm will pay physicians for ideas suggesting new forms of medication. No alarm need be felt at this dearth of inventiveness, as we feel sure the medical profession will be benefited by a respite from the flood of new synthetics and will grasp the opportunity thus afforded for a closer study of those now on the market.

Correspondence

Austin Flint's Notes on a Consumptive

To the Editor:—In going over the records of the late Dr. Austin Flint, New York, I happened on the following report of a case of pulmonary tuberculosis, together with Dr. Flint's notes.

Case Pulmonary Tuberculosis. Circumstances Illustrating Diagnosis Before Ulceration Has Ensued

A young man, aged 25, applied to me to-day for a cough. He has been in the habit of going on the lake in the summer seasons. At present he is tending a recess. His habits are good, but occasionally he takes a little spirit. I mean that he is not intemperate. Beyond this I did not inquire. His name is George Fowler. Is not aware that his family are prone to consumption. [They are not.] His father is still living. As this case illustrates the value of circumstances bearing on diagnosis in obscure cases of pulmotuberculosis before ulceration, I will note precisely its important points for after-reference.

His cough has existed all winter and he has not before applied for medical advice. [Phthisis rarely creates alarm.] It did not follow any acute attack of bronchitis or any other pulmonary inflammation. Thinks he must have taken cold, but this is a matter of course.

His cough has not been severe, has created no pain and never occurs independently of expectoration. [This shows that in this case, if there be tubercles, the presence of the tuberculous deposit does not excite irritation sufficient for cough. It is only the presence of the secretion in the bronchial tubes.]

He expectorates moderately, but especially in the morning, and represents it as sometimes yellow, and sometimes of a darker color, probably ink color. [It strikes me here is a point of some import; if the case were one of bronchitis purely (which it is if it be not tuberculous) there would be greater secretion through the day, because the mucous membrane would be more irritated by inhaling dust, etc. Another and much stronger point, moreover, is that the cough and expectoration are both too little for a chronic bronchitis.]

He has at various times had shooting pains in different portions of chest. [Slight pleuritic adhesions. This is very different from the soreness of bronchitis, which would also be more or less constant if it existed at all.]

He has had very frequently chilly sensations, especially shooting down the back and into the shoulders. Is subject to them almost daily. Attributes this to having formerly had the fever and ague. [A symptom of considerable value.] Has lost considerable flesh during the winter. [Another bad symptom.] Is readily put out of breath by exercise. [Another significant fact.] Has lost some strength, but thinks not much. [He has probably lost more than he thinks.] Appetite is good. Bowels are regular. Sleeps well and feels well. Digests well for aught that he knows.

Pulse is 100. I saw him last night and to-day. It enumerated this last night and was not less this morning. [A very bad symptom. One of the most reliable of rational facts. He had indubitably tuberculous fever. With the same accelerated circulation from any other cause—from local inflammation he would be more conscious

of severe ailment. He would be confined to his bed or at least to his house. On the contrary, he is now about his business. If the disease were chronic bronchitis he would not have this pulse.]

Says he has no fever at night; hands and feet are not hot. Does not perspire. [He has tuberculous fever, not yet hectic fever.]

Here is a general view of the rational symptoms. Now of the physical. There is evidently a slight dulness on the left side contrasted with the right. I think there is slight dulness on the right also. I think the respiration is rough on both sides and there is an evident distinction between the two sides—the left being more rough. This distinction was particularly perceptible posteriorly in the interscapular spaces. Action of heart unusually perceptible to the ear, in all parts of chest. On the left side there is a slight hitch in the respiratory murmur. No râles were perceptible.

In view of the foregoing history I consider it demonstrative that this young man is the victim of tuberculous disease of lungs. His symptoms will progressively increase, he will shortly have hectic fever, judging especially from the tuberculous fever, I predict that he will succumb within six months, and very likely within three.

Mark that he is not now in his own opinion an invalid. He is merely troubled with a slight cough. He has no apprehensions. He has no cavities, no hectic—and yet he may confidently be pronounced a doomed man. If the result confirm this prediction it will certainly show that attention to the points connected with the diagnosis of pulmonary tuberculosis enables the practitioner to have a prescience which must appear remarkable to one not acquainted with the value of evidence bearing on the subject.

April 10, 1846.

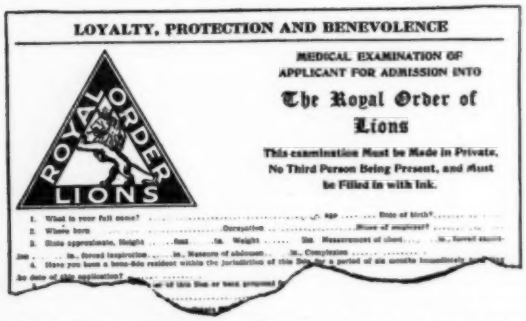
Oct. 11, 1846. This person went to Iowa and passed the summer. He returned recently and again applied to me for advice. His cough and other symptoms were about the same as they were last April. He had lost little if any flesh. Had taken no medicine. I did not examine him closely, but I could not discover on a general examination that the disease had made any appreciable progress. Dr. Trowbridge, Sr., saw him with me, concluded in the diagnosis of incipient tuberculosis and joined in advice to seek a warm climate for the winter. The patient has taken our advice, but his particular destination I do not know. He promised to write.

That Dr. Flint should have grasped so clearly the diagnostic significance of the various symptoms and signs of tuberculosis as early as 1846, shows the acuteness of his diagnostic ability. It seems worth while to publish this case from a historical point.

LAWRASON BROWN, Saranac Lake, N. Y.

The Royal Order of Lions Fraud

To the Editor:—There is a fellow traveling over the country inducing the physicians to examine for his new order the "Royal Order of Lions" so called. He calls on two physicians in each city to obtain their services as examiners. For this privilege they pay $5.00 in advance. He gives you a receipt, bids you goodbye and that is the last you hear from him. He has roped in any number of doctors throughout Minnesota. There is no such order in existence so far as we can learn. Enclosed find blank application and receipt. He is of slight build, dark complexion, medium height, traveling with a woman whom he calls his wife; she is a dark, short, robust, pretty-faced girl. I thought a notice could be published in the next issue which might be the means of catching him somewhere.


LOYALTY, PROTECTION AND BENEVOLENCE

ROYAL ORDER LIONS

MEDICAL EXAMINATION OF APPLICANT FOR ADMISSION INTO

The Royal Order of Lions

This examination Must be Made in Private. No Third Person Being Present, and Must be Filled in with Ink.

Photographic reproduction (reduced) of part of the medical examination and application blank used by the individual who persuaded physicians to pay $5 for the privilege of becoming a medical examiner for the hypothetical Royal Order of Lions.

CHARLES F. BRIGHAM, St. Cloud, Minn.
President St. Cloud Board of Health.

COMMENT.—The application blank, receipt and other printed matter which Dr. Brigham sends with his letter have nothing on them to show where the headquarters of the Royal Order of Lions are located. The "Receipt and Admittance Card, Supreme Den of the World, Royal Order of Lions" has the name "J. L. Giblin, National Organizer" printed on it and the receipt is signed "J. R. Landauer, Supreme Organizer." The latter name also appears on some of the printed matter that details the wonderful advantages to be gained by joining "The Fastest Growing, Fraternal, Social and Beneficial Order." The descriptive pamphlet states that this is "The Order That Does Things;" Dr. Brigham's letter indicates that it evidently does.

Fetal Death from Knotted Cord

To the Editor:—In THE JOURNAL, August 12, page 563, Dr. Froehlich reports a case of death of fetus due to twisting of the cord. In a somewhat similar case under my care, labor occurring on the date expected, the patient had not felt life for six days. Physical examination revealed absence of heart sounds. A fully developed male child was born dead. There was a knot in the cord about 6 inches from the fetal end, drawn tightly enough to cut off the circulation completely.

MARK BEACH, M.D., Clinton, Kan.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIAGNOSIS OF A CASE OF NARCOLEPSY

To the Editor:—I have a somewhat baffling case under my care, and in view of the fact that the text-books, so far as I have investigated, suggest very little on the subject, I appeal to you. History: The patient is a married woman, under middle age, the mother of two healthy children. Her pregnancies have been very easy; she is of medium height and weight, is intelligent and looks the picture of good health and says she feels it, with the exception of some sharp pains of an anginal character over the pericardium, from which at intervals she is free. She came to North Dakota about ten years ago and began almost at once to experience great drowsiness. She would rest her arm on the table, for example, at meal-time and fall into a profound sleep, from which she would be aroused with considerable effort. To prevent a further lapse it would be necessary for her husband to walk with her in the cold air. At this time, and for some years back, she would lapse into a sound sleep, even while at the table, when chatting with friends or while holding the baby. When carrying her baby she had to be watched in order to be prevented from dropping it. When she felt the attack coming on while at her meal she would hurriedly sip a little tea from her cup, but often she would begin to snore while the cup was half way between the table and her lips. The sleep is profound, lasts only a few minutes, after which the patient wakes perfectly refreshed and clear. Objective findings: Urinalysis is negative; the chest and abdominal organs are normal; the vision is good; the pupils are equal in size and active to light and accommodation; no focal symptoms of intracranial tumor or epilepsy are present. As the condition is very perplexing I should greatly appreciate advice.

M. L. G.

ANSWER.—The case appears to belong to that rare and interesting, though obscure, condition called "narcolepsy," which Gélineau first described in the *Gazette des Hôpitaux*, 1880, p. 626. In the *Archives Gén. de Médecine*, 1905, No. 25, Raymond succinctly defines true narcolepsy as a condition characterized by a sudden and irresistible inclination to sleep, occurring during the hours not usually spent in normal sleep and appearing at irregular intervals, lasting a variable period of time. The person so affected may be overpowered by sleep in the midst of his ordinary occupation and at most unexpected moments, even during meals at table. Authorities still differ in respect to the proper place of narcolepsy in the classification of diseases. All agree in calling it a functional neurosis when it is not symptomatic of brain tumor, syphilis or autointoxication. Although Gélineau described narcolepsy as an independent neurosis, most neurologists agree with Féré ("Twentieth Century Practice of Medicine," p. 501-503), who classes it among the symptoms of hysteria. In speaking of sleeping attacks, he says among other things: "In hysterical subjects we sometimes observe sudden but short-timed attacks of deep slumber, which Gélineau has designated by the name of narcolepsy, but which are always symptomatic, as Ballet has well shown." Continuing, Féré compares these crises to postepileptic stertor, but he regards them as larval forms of hystero-epilepsy, which is true hysteria, according to our latest conceptions of this symptom-complex. In conclusion, he quotes Pitres as having reported the case of a woman who had to yield to the sleeping attack even when she ran about trying to

prevent it, or when she placed herself under a shower-bath. In opposition to this view, it must be stated that neurologists of experience see cases in which a short, sudden attack of drowsiness constitutes the sole symptom of petit mal in idiopathic epilepsy. If there be no obesity, diabetes, gout or hepatic disorder, and if tumor or syphilis of the brain can be excluded, and further, if there are no other evidences of hysteria, the condition should awaken a strong suspicion of epilepsy of the petit mal variety. The treatment of true narcolepsy is extremely unsatisfactory. If after a most painstaking examination we are convinced that there is no organic or metabolic disorder present, we resort to all those measures advised to combat hysteria. A course of thorough purging may cause a temporary disappearance of the tendency to sleep-attacks. Further, attention to proper hygiene and environmental changes and psychotherapy may be tried. Last of all, if these measures are of no avail, a course of bromids, as for ordinary epilepsy, should be given a faithful trial.

Besides the authorities mentioned, there will be found in the *American Journal of the Medical Sciences* for August, 1906, an interesting report on a case of narcolepsy, by Albert N. Blodgett, who traces the condition in his case to a faulty heredity, extending over several generations.

HYPODERMIC INJECTIONS OF EUCALYPTUS OIL IN TUBERCULOSIS

To the Editor:—Please give references and a review of the literature on the use of oil of eucalyptus by hypodermic injection in tuberculosis.

J. A. BURNETT, M.D., Marble City, Okla.

ANSWER.—The following articles have appeared in recent years:

Berliner, M.: Zur Behandlung der Tuberkulose, Deutsche klin-therap. Wchnschr., Nr. 17, 1906.

Blümel: Treatment of Tuberculosis with Eucalyptus Oil Injections, Beiträge zur Klinik der Tuberkulose, B. viii, H. 2. Abstr. in THE JOURNAL, Dec. 7, 1907, p. 1960.

Berliner, M.: Treatment of Tuberculosis with Injections of Eucalyptol, Beiträge zur Klinik der Tuberkulose, B. x, H. 3.

This treatment of tuberculosis has been recommended by Berliner who gives it by hypodermic injections of a solution in castor oil. He begins with a somewhat weak solution, but increases until the dose reaches 2 c.c. of a 33⅓ per cent. solution twice a week. His results, he claims, are unusually favorable. Cough, he says, becomes less troublesome or disappears and the dyspnea is relieved. Blümel submitted the method of Berliner to a critical trial and reports unfavorably, and feels that it is his duty to warn against certain side-effects as dangerous and injurious, especially as to the method of application advocated. To this Berliner replies that the purity of the castor oil is very important and recommends a proprietary preparation made by a somewhat obscure German firm. Blümel found that patients complained of pain after the injections, but Berliner denies that that has been his experience. The objection of Blümel that the injections were followed by the appearance of albumin in the urine is not accepted by Berliner, who attributes this symptom to an antecedent disease of the kidney.

MILD TYPE OF SMALL-POX

To the Editor:—During the last few years there have been reported in the United States small-pox epidemics with remarkably low mortality. On account of this benignity, many physicians believed that these were not the real small-pox, and much discussion was aroused. Since last year we have had a similar epidemic here, and some physicians believed that we had to deal with a new disease, much like small-pox, but still different in many ways. I am very anxious to obtain information on the following points: 1. Has it been proved that the epidemics in the United States were true small-pox?

2. On what is this proof based?

A. CARINI, Director Pasteur Institute, Sao Paulo, Brazil.

ANSWER.—1. No serious doubt has been expressed about it in the last ten years. From the early months of 1899 to 1901, many physicians having little or no experience with small-pox were unable to make a diagnosis of the mild type of the disease at that time prevalent in the United States. A few health officers with little experience with this disease were doubtful about the diagnosis, but at no time were those of the health officers who had had experience with small-pox in doubt about the nature of the disease. Anyone who is at all familiar with the various types of small-pox could not hesitate for a moment to pronounce the disease under consideration small-pox. Cases of the disease under discussion from all parts of the United States, Canada and Mexico, where the mild and debatable disease existed, were clearly small-pox, though the death-rate was low.

From Jan. 1, 1899 to Dec. 31, 1902, 692 cases of small-pox were treated in the Chicago Isolation Hospital, with a death-rate of a fraction under 2 per cent. (1.78 per cent.). From Jan. 1, 1903, to Dec. 31, 1905, 1,293 cases were admitted to the hospital, with a death-rate of 10.5 per cent. From Jan. 1, 1906, to the present date (Aug. 8, 1911), 355 patients were admitted to the Isolation Hospital, of whom but three died and two of these were imported from Europe—a severe type of the disease.

2. The period of incubation is the same as that of small-pox. The three days of prodromal symptoms followed by a papular eruption and a drop in temperature are invariably present. The life history of the lesion is that of small-pox—papule, vesicle, pustule, scab, leaving pigmentation spots, though the course is sometimes short, like small-pox modified by an old vaccination, but all the symptoms are present if the diagnostician has the patience to secure all the symptoms, not forgetting that many patients will lie about their symptoms through fear of being sent to the hospital. The disease attacks only those not protected by vaccination. Those recently vaccinated, say within ten years, or those vaccinated and revaccinated, do not contract the disease. Those not vaccinated, when exposed to the disease almost invariably contract the disease. Confluent and hemorrhagic cases of small-pox were placed side by side with hundreds of these mild cases in unvaccinated subjects in the hospital wards, where exposure of the latter to the former was close and prolonged, and in no instance did a second disease develop.

Dr. Rawlings, house physician at the Isolation Hospital, vaccinated a series of 100 patients recovered from this disputed mild type of small-pox and failed to secure a vaccination on any of them, though none had previously been vaccinated.

Confluent and hemorrhagic small-pox are contracted from the mild cases of so-called "Cuban itch." This has repeatedly been observed. An attack of the disease protects from small-pox; it protects against vaccination; vaccination protects against the disease and the disease conveys to others the severe types of small-pox.

A symposium on the subject of small-pox was read at the meeting of the American Medical Association held at St. Paul, in 1901. The papers read were published during that year. After a full discussion of the subject, a resolution was passed declaring it to be the opinion of the Section on Practice of Medicine that the epidemic then prevalent and under discussion was small-pox.

CARBON-DIOXID SNOW—CALENTURA FEVER

To the Editor:—Please tell me through THE JOURNAL (1) what carbon-dioxid snow is, and (2) what calentura fever is. I cannot find a definition for either term.

S. C. BROADSTREET, Mount Pleasant, Texas.

ANSWER.—1. Carbon-dioxid snow is carbon dioxid in the solid form, in which it is obtained by allowing the liquefied gas to escape from a container in the form of a spray. The evaporation of some of the liquid takes heat from the rest so that it freezes in fine particles like snow. Carbon-dioxid snow can be collected in a cloth or piece of chamois skin, pressed together and molded into various shapes. The layer of gas which surrounds it prevents it from freezing the hand unless too great pressure be exerted. When it is applied to the skin, the intense cold produced by its evaporation freezes the skin and produces the desired caustic effect. See article by W. A. Pusey, THE JOURNAL, Oct. 19, 1907, p. 1354.

2. *Calentura* is Spanish for "heat" or "fever," and is applied to a mild ephemeral or continued fever of tropical countries, often called by the natives of the English-speaking tropics a "cold." The term is also applied to thermic fever or sunstroke.

THE COMPOSITION OF HAIR DYES AND THE EFFECTS OF THEIR USE

To the Editor:—What reliable scientific information exists in regard to hair dyes? I am interested to find out what substances are employed, whence they come from, what injurious effects they may produce, etc.

R. C.

ANSWER.—Hair dyes are chiefly of two classes. (1) Those which secure the effect by precipitating a metallic compound, usually sulphid of a reduced silver salt in the hair, and (2) those which darken the hair by the oxidation of some organic substances, such as pyrogallol. A number of combinations of the first class have been recommended in the past but they have largely fallen into disuse. Dyes of the second class are largely proprietary and depend on the use of various coal tar products which are likely to be irritating to the skin and may produce a severe dermatitis. Among

the metallic compounds used for dyeing the hair may be mentioned salts of silver, lead, mercury, bismuth and iron. The salts of silver blacken on exposure to light or by the use of reducing agents. Silver may be absorbed by the scalp, but poisoning in this manner seems to be unusual. Lead is probably more frequently absorbed and it is possible that it may give rise to serious poisoning. The same may be said to be true of mercury. Of course, no such effects are likely to be produced by the salts of bismuth or iron. Systemic poisoning from hair dyes seems to be very rare and some dermatologists state that these substances are not known to have a deleterious effect on the general health. A considerable number of reports have appeared in THE JOURNAL of dermatitis, sometimes quite severe, which was attributed to the use of a proprietary hair dye, known as "Mrs. Potter's Walnut Stain." This dye (as well as another called "Eau Sublime") contains paraphenylene diamin which by the action of hydrogen dioxid gives quinone, a substance which has a very irritating action. The poisonous qualities of paraphenylene diamin have long been known. In addition to thirty-two cases of poisoning that have been reported to THE JOURNAL (Feb. 13, 1909; March 6, 1909; April 3, 1909; May 15, 1909; Aug. 14, 1909, and Sept. 4, 1909), eighteen cases have been reported by Gathelineau. Broeq described a severe form of poisoning due to this chemical; Balso reports a case of poisoning due to wearing hose which had been dyed with the chlorate of paraphenylene diamin, and Mewborn (THE JOURNAL A. M. A., May 18, 1901) reported a case of dermatitis from the use of a hair dye having this chemical for its base. This subject has also been discussed editorially in THE JOURNAL, Sept. 4, 1909, page 803.

PREPARATION OF SODIUM CACODYLATE SOLUTION FOR HYPODERMIC INJECTION

To the Editor:—Please give the formula for preparing sodium cacodylate solution as for hypodermic injection and the daily dose advised and your opinion as to its efficacy.

E. P. MCGEHEE, Lake Village, Ark.

ANSWER.—Sodium cacodylate is readily soluble in water so that the desired dose, usually from ½ to 2 grains, can be given in an ordinary hypodermic syringe full of sterile water. Stock solutions should not be used, as they deteriorate readily, but the pharmacist should weigh out the desired dose for each administration and place it in a sterile bottle for use at the time of injection. Wholesale druggists furnish the drug in ampoules ready for use. J. B. Murphy advises an initial dose of from 2 to 4 grains, which should not be repeated within three or four days unless there are special indications for it. Other clinicians have given from ½ to 3 grains daily for a number of days. Probably it is better, as a rule, to allow an interval of three days. Clinical experience with sodium cacodylate in syphilis is not yet sufficiently extensive to enable a conclusive opinion regarding its efficacy to be formed.

MEDICAL WRITINGS OF OLIVER WENDELL HOLMES

To the Editor:—Kindly let me know through the "Queries and Minor Notes" column if the complete medical writings of Oliver Wendell Holmes are published in book form, and if so, by whom, the price, etc. Most of us have read extracts from Dr. Holmes' writings and the majority of us, perhaps, have a copy of his masterly paper on the infectious nature of puerperal sepsis filed away among our journals; but I, for one, should like to have such things in book form.

D. M. MOLLOY, Manila, P. I.

ANSWER.—The medical writings of Oliver Wendell Holmes have been published in one volume by Houghton, Mifflin & Co., Boston, under the title "Medical Essays." Price, $1.50.

The Public Service

Medical Department, U. S. Army

Changes during the week ended Aug. 12, 1911:

Boehs, Charles J., M.R.C., orders to Fort Porter, N. Y., for temporary duty revoked.

Ingalls, R. E., dental surgeon, left temporary duty at Fort Apache en route to Whipple Barracks, Ariz., for temporary duty.

Burket, John A., lieut., ordered to proceed from Fort Riley, Kan., to Fort Des Moines, Iowa, for temporary duty.

Moncrief, William H., captain, ordered to proceed from Fort Leavenworth, Kan., to Fort Sheridan, Ill., for duty with troops from post to Camp Perry, Ohio, and return to post instead of duty at Camp Port Huron, Mich.

Owen, Leartus J., captain, relieved from duty as inspector-instructor of the organized militia of Michigan, Aug. 9-18, 1911.

Blanchard, R. M., captain, detailed inspector-instructor, organized militia of Michigan, in camp Aug. 9 to 18, 1911, Fort Huron, Mich.

Holmberg, Carl R., lieut., granted leave of absence for thirty days.

Wolven, F. Homer, dental surgeon, reported for temporary duty at Fort Gibbon, Alaska.

Winter, Francis A., major, will proceed to New York City for consultation with medical supply officer, in connection with purchase of medical supplies. On completion of duty to return to station.

Maus, L. Mervin, colonel, is granted leave of absence for one month and ten days on or about Aug. 21, 1911.

Gilchrist, Harry L., major, is detailed as instructor of sanitary troops at Camp Nevada, Mo., Aug. 20, 1911. On conclusion of encampment will return to his station.

Duncan, Louis C., captain, on arrival at San Francisco, will proceed to the Presidio and report to commanding officer, General Hospital, for duty.

Billingslea, Charles C., captain, when relieved by Captain Duncan, will proceed to Columbus Barracks, Ohio, for duty.

Phalen, James M., captain, is relieved Oct. 1, 1911, at Columbus Barracks, Ohio, and will proceed to New York City as attending surgeon.

Brewer, Isaac W., M.R.C., on arrival at San Francisco, will proceed to Fort Niagara, N. Y., for duty.

Smith, Herbert H., M.R.C., on his arrival at San Francisco, will proceed to Fort Lincoln, N. Dak., for duty.

Boards of officers to meet on September 1 for examination of applicants for acting dental surgeons are appointed as follows:

Fort Slocum, N. Y.: Wadhams, Sanford H., major; Boak, S. Davis, dental surgeon; Tignor, Edwin P., dental surgeon.

Columbus Barracks, Ohio: Fisher, Henry C., lieut.-col.; Mason, George L., dental surgeon; Bernheim, Julien R., dental surgeon.

Jefferson Barracks, Mo.: Howard, Deane C., major; Voorhees, Hugh G., dental surgeon; McAlister, John A., dental surgeon.

Fort Logan, Colo.: Shook, Jay Ralph, major; Lauderdale, Clarence E., dental surgeon; Wing, Franklin F., dental surgeon.

Fort McDowell, Cal.: Brooks, William H., major; Hess, John H., dental surgeon; Chambers, William H., dental surgeon.

Truby, W. F., major, granted two months' leave of absence.

Kerr, Robert W., lieut., granted leave of absence for two months.

Marietta, S. U., M.R.C., ordered to active service and assigned to duty, Aug. 23, 1911, to Fort Sheridan, Ill.

Medical Corps, U. S. Navy

Changes for the week ended Aug. 12, 1911.

Taylor, J. L., P. A. surgeon, detached from the naval hospital, Norfolk, Va., and ordered to the naval hospital, Las Animas, Colo., for treatment.

Kelley, H. L., P. A. surgeon, detached from the naval hospital, Mare Island, Cal., and ordered to the Navy yard, Mare Island, Cal.

Hoyt, R. E., P. A. surgeon, detached from the Navy yard, Mare Island, Cal., and ordered to the Navy recruiting station, Los Angeles, Cal.

Bunker, C. W. O., P. A. surgeon, ordered to duty at the naval hospital, Mare Island, Cal.

Parham, J. C., asst.-surg., ordered to duty at the naval hospital, Philadelphia.

Zalesky, W. J., P. A. surgeon, detached from the *Franklin* and ordered to the Navy yard, Charleston, S. C.

Howard, J. V., P. A. surgeon, detached from the *Supply* and ordered to the naval station, Guam, P. I.

Abernathy, R. T., pharmacist, detached from the naval hospital, Las Animas, Colo., and ordered to the naval hospital, Washington, D. C., for observation and treatment.

Stuart, M. A., P. A. surgeon, detached from the Navy yard, Charleston, S. C., and ordered to the *Franklin*.

U. S. Public Health and Marine-Hospital Service

Changes for the week ended Aug. 9, 1911.

Trask, J. W., asst. surg.-gen., granted twenty-six days' leave of absence from Aug. 8, 1911.

Austin, H. W., surgeon, granted one day's leave of absence, Aug. 6, 1911, under paragraph 189, Service Regulations.

Williams, L. L., surgeon, granted three days' leave of absence from Aug. 6, 1911, under paragraph 189, Service Regulations.

Mathewson, H. S., P. A. surgeon, relieved from duty at Fort Stanton, N. Mex.

McMullen, John, P. A. surgeon, granted twenty-one days' leave of absence from Aug. 7, 1911.

Robinson, D. E., P. A. surgeon, granted twenty-one days' leave of absence from Aug. 12, 1911.

McLaughlin, A. J., P. A. surgeon, directed to proceed to Providence, R. I., from Boston, Mass., and on completion of duty enjoined to return to Boston.

Lloyd, B. J., P. A. surgeon, granted two days' leave of absence, July 28-29, 1911.

Rucker, W. C., P. A. surgeon, granted seven days' leave of absence en route to rejoin station.

Smith, F. C., P. A. surgeon, to assume temporary charge of Fort Stanton, N. Mex.

Duffy, B. J., asst.-surg., granted seven days' leave of absence from Aug. 12, 1911.

Clarke, F. M., A. A. surgeon, granted ten days' leave of absence, with pay, from Aug. 5, 1911, and fifteen days' leave of absence, without pay, from Aug. 15, 1911.

Earl, F. D., A. A. surgeon, granted two days' leave of absence, July 30-31, 1911.

Richter, H. C., A. A. surgeon, granted thirty days' leave of absence from Aug. 1, 1911.

Savage, W. L., A. A. surgeon, granted thirty days' leave of absence from Aug. 8, 1911.

Simonson, G. T., A. A. surgeon, granted two days' leave of absence, Aug. 4-5, 1911.

Storrs, H. R., A. A. surgeon, granted seven days' leave of absence, without pay, from Aug. 3, 1911.

Walker, H. D., A. A. surgeon, granted twenty-five days' leave of absence, without pay, from Aug. 7, 1911.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

IOWA: Capitol Building, Des Moines, September 19-21. Sec., Dr. Guilford H. Sumner.

MASSACHUSETTS: State House, Boston, September 12-14. Sec., Dr. Edwin B. Harvey.

MISSOURI: Kansas City, September 25-27. Sec., Dr. Frank B. Hiller, Jefferson City.

NEW YORK: September 26-29. Mr. Harlan H. Horner, Chief of Examinations Division, Department of Education, Albany.

Wisconsin May Report

Dr. John M. Beffel, secretary of the Wisconsin Board of Medical Examiners, reports the written and oral examination held at Milwaukee, May 24-26, 1911. The number of subjects examined in was 22; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 69, of whom 68 passed and 1 was conditioned. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Northwestern University Medical School	(1872)	84.
Rush Medical College	(1911)	87.
Bennett Medical College	(1911)	81.
Kentucky School of Medicine	(1893)	81.
American Medical College, St. Louis	(1897)	81.
Marquette University, Milwaukee, (1909) 75; (1910) 75, 75, 85; (1911) 75, 76, 76, 77, 77, 78, 79, 79, 79, 80, 80, 80, 80, 81, 81, 81, 81, 81, 82, 82, 82, 82, 83, 83, 83, 83, 85, 84, 84, 84, 85, 85, 86, 86, 86, 87, 87, 88.		
Wisconsin College of Physicians and Surgeons, (1910) 83; (1911) 75, 75, 77, 78, 79, 80, 80, 80, 81, 81, 82, 85, 85, 85, 86, 86.		
Western University, London, Ontario	(1909)	79.
Queen's University, Kingston, Ontario. (1902) 76; (1911)		80.
CONDITIONED		
Marquette University, Milwaukee	(1911)	72.*

* Conditioned in pathology and neurology.

Ohio June Report

Dr. George H. Matson, secretary of the State Medical Board of Ohio, reports written and practical examination held at Columbus, June 6-8, 1911. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 162, of whom 152 passed and 8 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Baltimore Medical College	(1911)*	
Harvard University Medical School	(1911)	85.1
University of Michigan, Homeopathic College	(1911)	84.6
Johns Hopkins University	(1910) 87; (1911)	79.3, 82.5
Bellevue Hospital Medical College	(1876)	76.
Ohio-Miami Medical College, (1910) 77; (1911) 75.1, 76, 76.7, 77.5, 77.5, 79.8, 79.9, 80, 80.4, 80.5, 80.9, 81.1, 81.1, 81.6, 81.7, 81.7, 81.8, 82.8, 83, 83.1, 83.1, 83.4, 83.4, 83.6, 83.6, 83.7, 83.8, 84, 84, 84.8, 86.5.		
Eclectic Medical College, Cincinnati, (1908) 78; (1911) 76, 76.4, 78.7, 79, 81.6, 84.7, 84.9.		
Starling-Ohio Medical College, (1911) 75, 75, 75.8, 76.1, 76.1, 77, 77.9, 78, 78.1, 78.4, 79.4, 79.9, 80.4, 80.6, 80.8, 80.9, 81.2, 81.4, 81.5, 81.6, 81.6, 81.9, 82, 82, 82.2, 82.4, 82.5, 82.5, 82.6, 83.3, 83.4 83.6, 83.7, 83.8, 83.9, 84, 84, 84.1, 84.4, 84.6, 84.6, 84.7, 84.9, 84.9, 85, 86.6, 86.7, 87, 88.3, 89.		
Western Reserve University, (1911) 78.1, 80.3, 81.2, 82.6, 83.1, 83.5, 83.8, 85, 85.1, 85.8, 86.2, 89.3, 89.7.		
Cleveland College of Physicians and Surgeons, (1908) 83.5; (1911) 75, 78, 78.8, 78.9, 79.3, 79.5, 80.5, 81.3, 81.5, 81.5, 81.5, 81.8, 82.6, 82.6, 83, 83.4, 84, 84.1, 84.8, 85.2, 85.9.		
Toledo Medical College, (1911) 79, 80, 80.1, 80.1, 80.3, 81, 81.6, 86.3.		
Cleveland-Pulte Medical College, (1911) 77.2, 77.6, 78.1, 79, 79.1, 81.9, 83.4.		
Jefferson Medical College	(1910)	77.5
University of Pennsylvania	(1905)*	
Western University, London, Ontario	(1910)	78.6
University of Berne, Switzerland	(1900)*	
Royal College of Physicians and Surg., Glasgow†	(1898)	
FAILED		
Starling-Ohio Medical College	(1911)	70.7
Ohio-Miami Medical College	(1911)	73.9
Eclectic Medical College, Cincinnati, (1910) 59,4, (1911) 73,		73.8
Cleveland-Pulte Medical College	(1910)	70.4
University of Tennessee	(1907)	73.8
Lincoln Memorial University, Medical Department	(1911)	72.6

* Percentage not given.

† Not a medical school but an examining body.

Wyoming June Report

Dr. J. B. Tyrrell, secretary of the Wyoming State Board of Medical Examiners reports the written examination held at Laramie, June 6-8, 1911. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75, and not less than 60 in any one branch. The total number of candidates examined was 2, both of whom passed. Eight candidates were licensed through reciprocity. The following colleges were represented:

College	Grad. Year	Cent. Per
PASSED		
Western Reserve University	(1902)	85.2
Marquette University	(1910)	85.6

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Colorado	(1910)	Colorado
Chicago College of Medicine and Surgery	(1910)	Illinois
Kansas Medical College	(1909)	Kansas
University of Kansas	(1909)	Kansas
Detroit College of Medicine	(1906)	Michigan
University of Michigan, College of Medicine	(1889)	Illinois
Cornell University Medical College	(1910)	Illinois
Medical College of Ohio	(1908)	Ohio

Delaware June Report

Dr. H. W. Briggs, secretary of the Medical Council of Delaware, reports the written examination held at Dover, June 20-22, 1911. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 15, all of whom passed. Three candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1905)	88
Chicago College of Medicine and Surgery	(1911)	81.6
Baltimore Medical College	(1910) 79.2; (1911)	88.1
College of Physicians and Surgeons, Baltimore	(1911)	81 6
University of Maryland	(1910)	84.5
Medico-Chirurgical College of Philadelphia	(1911)	82.5
University of Pennsylvania	(1911)	87.9
Jefferson Medical College	(1911) 79, 81.5, 82.4, 82.9, 85.6, 92.2	
Woman's Medical College of Pennsylvania	(1911)	79.4

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Maryland	(1882)	Maryland
Medico-Chirurgical College of Philadelphia	(1907)	Penna.
Western Pennsylvania Medical College	(1903)	Penna.

Washington July Report

Dr. F. P. Witter, secretary of the Board of Medical Examiners of the State of Washington, reports the written and practical examination held at Tacoma, July 5-8, 1911. The number of subjects examined in was 11; total number of questions asked, 100; percentage required to pass, 75, and not less than 60 in any one subject. The total number of candidates examined was 85, of whom 53 passed, including 1 osteopath, and 29 failed, including 4 osteopaths. Three candidates did not complete the examination. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Colorado	(1901) 76; (1911)	75
George Washington University	(1907)	78
Yale University	(1908)	76
Hahnemann Medical College and Hospital, Chicago	(1911)	81
Coll. of Phys. and Surgs., Chicago	(1883) 80; (1909)	85
Northwestern University Medical School (1909) 77, 84, 90; (1910) 75; (1911) 77, 81.		
Chicago Homeopathic College	(1901)	70
Rush Medical College	(1901) 85; (1909	86
University of Iowa, College of Medicine	(1910)	77
Tulane University of Louisiana	(1908)	78
University of Maryland	(1901)	81
Baltimore Medical College	(1907)	80
Harvard University Med. School	(1907) 80; (1908)	84
Tufts College Medical School	(1908)	75
Univ. of Mich., Dept. of Med. and Surg.	(1909) 78; (1910)	78
University of Michigan, Homeopathic College	(1897)	81
Hamline University	(1908)	75
Univ. of Minnesota, Coll. of Med. and Surg.	(1909)	81
University Medical College, Kansas City	(1897)	83
Barnes Medical College	(1905)	77, 82
Washington University, St. Louis	(1910)	75
Creighton Medical College	(1910) 75; (1911)	75
University of Buffalo	(1910)	79
Columbia Univ. Coll. of P. and S.	(1903) 77; (1911)	80

Bellevue Hospital Medical College....(1896) 78; (1898)		82
Medical College of Ohio.....(1909)		82
University of Oregon.....(1910)		77
Western Pennsylvania Medical College.....(1911)		82
University of Pennsylvania.....(1899)		79
Medico-Chirurgical College, Philadelphia.....(1896)		86
University of Virginia .....(1906)		75
Milwaukee Medical College.....(1910)		78
Queen's University, Kingston, Ontario.....(1907)		84
University of Toronto, Ontario.....(1910)		80
Trinity Medical College, Ontario.....(1901)		79, 82
University of Geneva, Switzerland.....(1911)		76
London School of Medicine for Women.....(1900)		51

FAILED

Northwestern University Medical School.....(1910)	66
Hahnemann Medical College and Hospital, Chicago.(1888)	56
Rush Medical College .....(1899) 65; (1901)	76
Bennett Medical College.....(1910)	24
Indiana Medical College.....(1907)	73
Iowa College of Physicians and Surgeons.....(1897)	65
Drake University .....(1900)	62
University of Louisville.....(1911)	68
Southwestern Homeopathic Med. Coll., Louisville.(1909)	58
Medical School of Maine.....(1909)	65
Baltimore Medical College.....(1910)	68
Tufts College Medical School.....(1906)	61
University Medical College, Kansas City.....(1898)	74
Barnes Medical College.....(1907)	55
St. Louis University .....(1910)	71
Washington University, St Louis....(1904) 70; (1911)	70
Creighton Medical College.....(1911)	62
Eclectic Medical College, Cincinnati.....(1911)	59
Pulte Medical College .....(1891)	75
Willamette University .....(1909)	64
University of Oregon .....(1911)	70
McGill University, Quebec .....(1909)	74
Trinity Medical College, Ontario.....(1903)	71

Connecticut Homeopathic July Report

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports that at the meeting held July 11, 1911, 1 candidate, a graduate of the New York Homeopathic Medical College and Hospital, 1899, was licensed through reciprocity with New Jersey.

Book Notices

UEBER SCHARLACH (DER SCHARLACHERKRANKUNG ZWEITER TEIL). Von Dr. Dionys Pospischill, k. k. Primararzt, und Dr. Fritz Weiss, gew. Assistent der Abteilung. Paper. Price, 5 marks. Pp. 147. Berlin: S. Karger, Karlstrasse 15, 1911.

The authors have had enormous experience with scarlet fever. This work is based on the study of 3,605 cases seen within the six years ending with 1909 and especially on 2,605 cases seen during the last thirty-five months of that time. During these and previous years the authors have gathered a number of deep-rooted impressions and convictions about scarlet fever, and they express these with an earnestness and a fervor that is rather unusual in a scientific treatise. Only a single page is devoted to statistics. The authors aim rather to record their views which are the results of years of careful clinical observation. Pathology, bacteriology, hematology, etc., remain almost untouched—the work is essentially a clinical treatise.

This pamphlet is devoted wholly to what the authors call *das zweite Kranksein*, i. e., the second manifestation of illness in scarlet fever that occurs after the primary symptoms have abated or disappeared. This *zweite Kranksein* is not a complication, or a new illness; it is an integral part of the scarlet fever process. The symptoms when present are, in order of frequency, one or more of the following: (1) fever; (2) adenitis; (3) angina; (4) nephritis; (5) scarlet fever heart.

Special attention is given to nephritis and to the severe types of scarlet fever. Before the latter, the authors feel utterly helpless in affecting its course. In two series of 1,186 cases, each of the children kept on a milk diet on the one hand and on a general diet including rest, on the other hand, there was a difference of 1/6 of 1 per cent. in the number of cases of nephritis that developed. Mastoiditis, the authors state emphatically, should never be operated on radically. Moser's serum they consider of value.

The book is interesting alike to the student and practitioner of limited experience with scarlet fever, and to the specialist who has seen a great deal.

MEDICAL REVOLUTION. A Plea for National Preservation of Health Based on the Natural Interpretation of Disease. By Sydney W. Macilwaine, M.R.C.S., L.R.C.P. (Retired). Cloth. Price, 2 shillings 6 pence. Pp. 162. London: P. S. King & Son, Orchard House, Westminster, 1911.

This little book is a plea for a national preservation of health based on the natural interpretation of disease and is dedicated to the "intelligent and puzzled layman, to medical officers of health and general practitioners and to medical students to whom belong the future of our profession." The emphasis laid by the writer on prevention rather than cure is another indication of the rapidly changing views regarding the function of the medical profession. Probably the most suggestive and practical chapter is that on organization, in which Macilwaine pleads for a systematic and intelligent effort to make the collective experience of the entire medical profession of value to each member. After discussing the enormous practical experience of individual physicians at the end of long years of service, and of the profession in the aggregate, he says, "We have no organization for the collection, digesting and systematizing of experiences. The vast bulk of our raw material is deliberately allowed to die unorganized and unrecorded with the individual practitioner." His remedy is simple. "There must be created a central body of experienced men who shall collect information from the whole profession bearing on the causation of disease. This information they will systematize and redistribute regularly to every member of the profession. As soon as our knowledge of any particular disease was definite enough for the purpose it would be drafted into a permanent shape and also distributed to the profession. In this way the foundation of the ultimate text-book of medicine would be made. It would represent the accumulated and systematized experience of the whole profession. It would be comprehensive and would furnish the practitioner at last with a complete and reliable book of health." It is interesting to note in this connection that much the same plan of collecting data from each member of the profession was proposed in the American Medical Association over fifty years ago but has never been developed into a practical working scheme. The book is of interest as an evidence of the changing attitude of the medical profession in England. Evidently our English brethren are going to lead the way in the inevitable socialization of the medical profession.

CLINICAL SYMPTOMATOLOGY. With Special Reference to Life-Threatening Symptoms and Their Treatment. By Alois Pick, Professor of Medicine, University of Vienna, and Adolph Hecht, Pediatrician, St. Anne's Hospital, Vienna. An Authorized Translation Under the Editorial Supervision of Karl Konrad Koessler, M.D. (Univ. of Vienna), Instructor of Clinical Medicine, Rush Medical College, in Affiliation with the University of Chicago. Cloth. Price, $6 net. Pp. 833. New York: D. Appleton & Co., 1911.

The systematic grouping of the several diseases and pathologic conditions which may produce a given symptom, forms a valuable method for teaching differential diagnosis. Such a study enables the student to construct a mental cross-index to his store of facts concerning disease, and trains him in orderly habits of thought.

In this work Pick and Hecht discuss symptoms, such as vomiting, headache, pain in the chest, jaundice, etc., and after describing the mechanism by which the symptoms are produced, suggest appropriate therapeutic measures. This proposal of the authors to combine treatment with diagnosis is commendable. The diseases for which we possess specific remedies are relatively few in number, and treatment must often consist in alleviating the more distressing complaints of the patient. The study of symptoms offers a favorable opportunity for the discussion of rational therapy based on the pathologic condition present.

The opening chapter deals with general symptoms including nutritional and developmental anomalies, with a full discussion of the theories of the production of fever. The section on disturbance of heart action contains many valuable suggestions on treatment. We commend specially the chapters on dyspnea and pain in the chest. The space devoted to abdominal pain is rather limited, considering the importance of the subject. The subject of jaundice, too, deserves a more thorough consideration than is accorded to it by the authors. The chapter

on the symptomatology of poisoning by chemical agents will prove of interest.

The translator has adhered closely to the subject-matter of the German edition. The inverted sentence is employed rather more frequently than is consistent with idiomatic English. Typographic errors are rare.

The book contains much that is valuable to the student, and to the clinical instructor who wishes to present his subject from a new point of view.

INTERNAL SECRETIONS FROM A PHYSIOLOGIC AND THERAPEUTIC STANDPOINT. By Isaac Ott, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Cloth. Price, $1. Pp. 133, with illustrations. Easton Pa.: E. D. Vogel, 1910.

In these lectures Dr. Ott has undertaken to present a succinct account of the recent facts accruing from the study of the physiologic and pathologic action of the glands with internal secretion. The first and second lectures deal with individual glands, the parathyroids and the pituitary, the third with the correlation of such glands in the economy. Perhaps no better example of the nice adjustments of the animal economy can be produced than the action of the adrenals in producing a definite chemical substance, one-millionth of a grain of which raises blood-pressure and an excess of which might have very deleterious effects. The quantity and action of this secretion is so carefully regulated, however, that no harmful results arise in the normal animal. The study of the parathyroids brings out the records of a good deal of personal work on the part of the author. He found that tetany was due to a poison in the blood, but not entirely to loss of calcium. He found that the pituitary gland is able to some extent to compensate for failure of parathyroid function. In the second lecture, a more detailed study of the pituitary is made and some therapeutic deductions drawn. The author attributes acromegaly to hyperhypophysy and infantilism to hypohypophysy. He found that in experimental work none of the artificial preparations have as much power as the gland itself. The third lecture compares the action of the various glands and lays the foundation for the therapeutic deduction that overaction of one gland is to be controlled by giving the substance or secretion of another gland to counteract the effect of the first. A considerable number of therapeutic conclusions are here collected which naturally add to the interest of the work to the practicing physician. The book is quite profusely illustrated by a number of charts and tracings. Only a careful reading will disclose the full value of the facts which recent studies of the ductless glands have brought to light. Such a perusal we bespeak for this monograph.

LEHRBUCH DER KINDERHEILKUNDE. Bearbeitet von Prof. Dr. Feer, Heidelberg; Prof. Dr. Finkelstein, Berlin; Priv.-Doz. Dr. Ibrahim, München; Dr. L. F. Meyer, Berlin; Prof. Dr. Moro, München; Prof. Dr. Von Pirquet, Breslau; Prof. Dr. Pfaundler, München; Prof. Dr. Thiemich, Magdeburg; Priv.-Doz. Dr. Tobler, Heidelberg;; Herausgegeben von Prof. Dr. E. Feer, Direktor der Univ.-Kinderklinik in Heidelberg. Paper. Price, 11.50 marks. Pp. 734, with 162 illustrations. Vienna: Gustav Fischer, 1911.

This is a composite book, but the names of the contributors are an evidence that the editor selected men of authority to discuss the various subjects. Thus, Finkelstein and Meyer write on nutritional disorders and diseases of the new-born; Pfaundler, on blood, constitutional and metabolic disturbances; von Pirquet, on tuberculosis and diseases of the respiratory tract; Moro, on syphilis and dermatology; Feer, on heart diseases and acute infectious diseases; Ibrahim and Tobler, respectively, on diseases of the nervous and genito-urinary systems, while Thiemich contributes a valuable introductory chapter of 100 pages on general considerations, anatomy, physiology, nutrition and hygiene, examination, symptomatology, pathogenesis, prophylaxis and therapy. The continuity and unity of the book are not disturbed because each author discusses a complete subject.

The illustrations are abundant, original, well chosen and well executed. The book is exhaustive in spite of its size, partly because of its conciseness and partly because of the fact that it treats briefly the diseases which are common to child and adult and fully those which are peculiar to the child. For this reason infancy receives the largest share of attention.

THREE THOUSAND YEARS OF MENTAL HEALING. By George Barton Cutten, Ph.D. (Yale), President of Acadia University. Cloth. Price, $1.50 net. Pp. 318, with illustrations. New York: Charles Scribner's Sons, 1911.

This is a general historical review of mental healing. As the author intimates in the preface, many people nowadays are misled into believing that the recent mental healing movements are new in origin and in principle, simply and solely because they are ignorant of similar movements in the past. The author's object in writing this book was to show, on the contrary, that such movements as those known as Mormonism, Dowieism and Eddyism—mental healing combined with religious vagaries—are merely repetitions of similar movements in bygone ages, and that such individuals as the "Mountain Evangelist," George O. Barnes, Father Mathew and Francis Schlatter (the latter only the other day was attracting thousands of intelligent people to Denver who stood in line for hours to receive his magic touch and be healed) present characteristics which are to all intents and purposes the same as those of "healers" and leaders of cults hundreds and thousands of years ago.

The author is not a physician; he is president of Acadia University (Nova Scotia) and writes from the point of view of an intelligent layman. He discusses briefly, but philosophically, the different individuals, movements and fads of the past—relics, talismans, amulets, charms, royal touch, mesmerisms, etc., leading up to the final chapter, "The Healers of the Nineteenth Century." He recognizes that there has been, and is, an element of truth underlying all these things—the influence of the mind on the body.

When one has read this book one will be forced to acknowledge that with all our boasted civilization, with all our education and intelligence, the average human being of to-day is just as susceptible to imposition, just as easily led astray, and just as superstitious, as was the average human being one, two or three thousand years ago; also that ordinary common sense and logical reasoning are as foreign to the modern individual who is carried away with some fad or fancy that is cloaked in mystery or befogged with the supernatural, as they were to the individual human being one thousand years before Christ.

EDUCATION: HOW OLD THE NEW. By James J. Walsh, M.D., Dean and Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine. Cloth. Price, $2 net. Pp. 459. New York: Fordham University Press, 1910.

This volume contains eleven lectures and addresses. Of particular interest are the chapters on "The First Modern University"—that of Alexandria—"Ideal Popular Education," and "The Medical Profession for Six Thousand Years." Dr. Walsh shows in his interesting style that high ideals in education are not solely the product of recent decades, but were held and to a great extent fulfilled in ancient times. He shows also that much information of value may be obtained from a study of the history of education. In fact, he shows that the standards of medical education of a few decades ago were far inferior not only to those held centuries ago, but also to those long held by the Spanish-American universities of Mexico and South America. This book is well worth reading, and will be a valuable addition to the library of any one who desires a broad outlook on the subject of modern education.

REFRACTION AND MOTILITY OF THE EYE. With Chapters on Color-Blindness and the Field of Vision. Designed for Students and Practitioners. By Ellice M. Alger, M.D., Adjunct Professor of Ophthalmology at the New York Postgraduate Medical School. Cloth. Price, $1.50 net. Pp. 376, with 122 illustrations. Philadelphia: F. A. Davis Co., 1910.

This useful compend, now a year old, has found favor with students of refractive errors and of oculomuscular anomalies. Beginning with a chapter on optics the author furnishes a good account of the fundamental principles of the reflection and refraction of light, especially in their relation to the physiology of the eye. This is followed by a description of the normal or emmetropic eye, of the ophthalmoscope and its uses, and by a fairly well-considered report on that important subject, retinoscopy, which, by the way, we would prefer to call "skiascopy." Then follow chapters on hyperopia, myopia,

astigmatism, presbyopia, anisometropia, aphakia and binocular vision. Four good-sized sections of this text-book are devoted to the normal motility of the eye-ball and to the causes, diagnosis and treatment of its abnormal variations—heterophoria and heterotropia.

The subjects strabismus, squint and ocular paralysis (the writer apparently makes no distinction between "paresis" and "paralysis"), their causes, detection and cure, are also described in a manner very helpful to the student.

Just why, in a small work of this sort, chapters on color-blindness, the visual field and the relations of functional eye symptoms to general diseases are appended is not quite clear, unless it is held that every ocular interest may be regarded as more or less germane to the subject of refraction and heterophoria. The book is well made, fairly illustrated and has a capital index.

THE NERVOUS LIFE. By G. E. Partridge, Ph.D., Formerly Lecturer in Clark University. Cloth. Price, $1 net. Pp. 216. New York: Sturgis & Walton Co., 1911.

The author endeavors to point out some of the causes and conditions of the nervous, social and industrial life of our people as a whole, as well as the nervous life expressed in the temperament of the nervous individual. He holds that as the causes responsible for present conditions are rooted in the very heart of our national life and, indeed, of all social progress, the cure must be as profound and broad as the disease and must include the whole problem of education, mental and nervous hygiene and the personal problem of each individual. He endeavors to point out especially the psychologic causes and conditions of the nervous life and to suggest methods by which such conditions should be controlled. Chapters on biologic laws and self-knowledge serve as introductory. In Chapters 6 and 7, on the principles of control and the optimum life, the author defines his theory. The remainder of the book is devoted largely to discussing the practical means by which better conditions can be brought about. Food, exercise, rest and sleep, work and recreation are all discussed. The subject is one of vast importance and the book should be welcome as a contribution to a better knowledge of the complex conditions of modern life.

A TEXT-BOOK OF MEDICINE. For Students and Practitioners. By Dr. Adolf v. Strümpell, Professor of Special Pathology and Therapeutics at the University of Leipsic. Fourth American Edition. Translated by Permission from the Seventeenth Revised German Edition with Editorial Notes, Additional Chapters, and a Section on Mental Diseases, by Herman F. Vickery, A.B., M.D., Instructor in Clinical Medicine, Harvard University, and Philip Coombs Knapp, A.M., M.D., ex-President of the American Neurological Association. Cloth. In Two Volumes. Price, $12 net. Pp. 831 and 800, with 224 illustrations. New York: D. Appleton & Co., 1911.

It is twenty-five years since the first American edition of Professor Strümpell's text-book was published and ten years since the third American edition, translated from the fourteenth German edition, appeared. The present is the fourth American edition, corresponding to the seventeenth German edition. These facts are an evidence of the well-deserved popularity of this text-book, both in America and in Europe. The present edition has been brought well up to date by the addition of articles on the "fourth disease," Malta fever, Rocky Mountain fever and pellagra. The editors have also included a section on mental diseases, which are of interest to the general practitioner. The present edition, we are sure, will be accorded the same favorable reception as its predecessors.

A MANUAL OF THE DISEASES OF INFANTS AND CHILDREN. By John Ruhräh, M.D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Third Edition. Flexible leather. Price, $2.50 net. Pp. 534, with 173 illustrations. Philadelphia: W. B. Saunders Co., 1911.

Three editions in three years speaks well for a work of the size and scope of this. It is deservedly popular, inasmuch as it gives the busy practitioner a concise account of practically everything in this field. For a more detailed and discursive text larger works must be consulted. It is not intended to be more than a desk-book. Besides having revised the entire text, the author has added a dose-table of drugs, instructions for summer, the care of the mentally deficient, the blind and the deaf. The book is well illustrated by pictures and plates as well as charts.

Medicolegal

Right to Recover for Operation Followed by Death—Power of Wife to Bind Husband for Operation on Child

(French vs. Burlingame (Mo.), 134 S. W. R. 1100)

The St. Louis Court of Appeals here affirms a judgment for the plaintiff for the reasonable value of professional services rendered as a surgeon in performing an operation on the defendant's infant daughter, for which a charge of $100 was made. The defendant, father, resisted payment solely on the ground that the operation was performed without his knowledge or consent. The child, 9 years of age, was suffering with what was diagnosed as an abscess of the liver. The mother had brought the child to the city and was advised that an operation should be performed at once in order to permit the pus to escape, and thus save the patient's life. She agreed that the operation should be performed, and it was, at a hospital, on the following day, when it was said that as much as 2 quarts of pus were removed. It was conceded that the operation was performed with skill, and that the death of the child, which occurred a day or two afterwards, was caused by weakness resulting from the disease. It was in evidence on the part of the defendant that he had objected to an operation before his wife left home with the child, and said that one should not be performed, but that fact was not communicated to the plaintiff, who was informed only that the father objected to the child's being removed to St. Louis.

The defendant relied on the case of Detwiler vs. Bowers, 9 Pa. Super. Ct. 473, where it was said that a surgical operation of doubtful advantage was not a necessary for which a non-assenting father was liable on an order given to the surgeon by the wife. But the facts in that case were dissimilar from those in this one, for there the malady from which the child suffered and for which the operation was performed at the instance of the mother, without the knowledge and against the consent of the father, was a cancerous tumor, and the parents had been advised that the disease would immediately reveal itself again, though an operation were had. Indeed, this prediction proved to be true in that case, for, though several operations were had, each time the cancerous growth recurred. On those facts, the court deemed the operation so known to be of doubtful advantage as one not falling within the category of necessaries furnished the child for which the parent should answer.

Here the facts were entirely dissimilar, for naught in the case suggested that the malady—an abscess of the liver—might return if once removed, and it was conceded that its removal was the only remaining chance for the recovery of the child. The fact that the defendant objected to the child being removed from home and brought to St. Louis for treatment by the plaintiff was wholly unimportant in view of the further fact that, notwithstanding, he permitted the removal to be made.

The defendant having acquiesced in the act of his wife in bringing the little one to the plaintiff in St. Louis for treatment, the case must be viewed as though the wife was his agent for the purpose. No one can doubt the implied agency of the wife to pledge her husband's credit for necessaries for herself or his minor children according to the circumstances of the case. It is the law, too, that the father is liable for such reasonable necessaries of life as are compatible with his circumstances furnished to his minor child by third persons in case he neglects to supply them, and they are procured by the child, or even by a prior divorced wife, for it.

It was conceded that the only chance of saving the life of the child was the operation, which the plaintiff performed in a careful and skillful manner. The fact that the patient subsequently died without fault of the surgeon was wholly immaterial to the obligation of the defendant to pay the reasonable value of his services.

In these circumstances, the court can imagine nothing more highly necessary to the welfare of the child or more within the obligation of the parent than the services rendered, for

it was the one and only hope of the little one's continued life to bless and cheer the parents. It was obvious, too, that this service was rendered at the instance and request of the defendant's wife, who possessed *prima facie* authority to bind him for such necessaries as were furnished to herself or his minor children. Infection was present and about to progress. The mother, unattended, except by the family physician, but with the father's consent, was in a great city with their child dangerously ill, seeking some measure of relief. So situated, was the mother to await communication with her husband at a distant part of the state, while the spell of almost immediate dissolution hovered over the little one, before asserting her authority to commit him to respond as for necessaries in compensation of services which offered the one chance for its life? The court answers no. It further says that the services rendered were in the circumstances of the case necessaries for which the law implied an obligation on the part of the father to pay when so performed at the instance and request of the mother. Every precept of natural justice suggests the liability of the defendant, and, if there is no precedent for sustaining the judgment, one should be established forthwith.

Incompetent Evidence to Fix Liability on Company for Services

(Chickasha Cotton Oil Co. vs. Lamb & Tyner (Okla.), 11½ Pac. 333)

The Supreme Court of Oklahoma reverses, for errors in the admission of evidence, a judgment recovered in this case against the oil company, by the latter-named parties, for services rendered as physicians to a wounded employee. The plaintiffs sought to fix liability on the company for their services by showing that the company's manager sent for them and requested that they render the services. Over the company's objection, they were permitted to testify that the person who called for them at the time of the accident stated that he had been sent by the president or manager of the company. But there was an entire absence of any other evidence in the record to show that the person who made this statement was in any way the agent of the company, or had been sent by its manager, and it is held that statements made in the absence of the defendant by the messenger, who was not shown to be the company's agent, could not bind the company, and were objectionable as hearsay testimony.

The company's defense was that its manager had not ordered the services of the plaintiffs; and that, if he had done so, he was without authority to bind the company in the premises. The company offered to prove by the manager that he was without such authority; but his testimony relative thereto was rejected by the trial court. That such testimony was competent seems plain; it bore directly on the issues of defense made by the company's answer. The burden was on the plaintiffs, under the issues formed by the pleadings, not only to show that the company's manager requested them to render the services for which they sought to recover, but also that he was acting within his authority as the agent of the company; and evidence by the company's officer who knew his authority was competent to contradict evidence offered by the plaintiffs in support of this issue.

It was also error to permit the plaintiffs to testify in their own behalf as to a conversation had between them and one Morrison, in which he made statements tending to show the admission by the company of its liability to the plaintiffs for their claim. They testified that he had asked them if they were still looking to the company, and, on being told that they were, said to them that they had better see the company about standing for any more of the bill; that the company had some money on hand that it expected to pay on the plaintiff's bill, but, before the plaintiffs did anything else, they had better see the company, as their bill was much more than the company was expecting anyhow. Morrison was an employee of the company, but to render the admissions of an agent admissible against his principal it must first be shown by competent evidence that such admissions were made in and as a part of the agent's performance of his duties and within the scope of his authority, which the record did not show in this case.

Physical Examinations of Policemen and Plaintiffs

(People ex rel. Wayman vs. Steward (Ill.), 94 N. E. R. 511)

The Supreme Court of Illinois holds that a rule making it the duty of the superintendent of police of the city of Chicago to ascertain, by physical and medical examinations conducted under his direction from time to time by a board of physicians, whether active patrolmen are able to perform the duties required of them, to the end that he may make assignments of patrolmen to such duties as they shall be physically able to perform, and that if any are permanently or totally incapacitated he may prefer charges of physical incapacity against them before the Civil Service Commission, does not violate the constitutional provision: "The right of the people to be secure in their persons, houses, papers and effects, against reasonable searches and seizures, shall not be violated." Courts have never looked on a physical examination to determine the fitness of a person for a particular service as a search, within the meaning of the constitutional provision. The case of a policeman is like that of a soldier, where physical ability is necessary and material part of an examination. It is not contended that the superintendent has authority forcibly to make, or cause to be made, a physical examination of a member of the police department. If a policeman does not choose to submit to the examination and to abide by the rules and regulations of the department, he merely commits the offense of disobeying the superintendent, and subjects himself to a charge of that kind before the Civil Service Commission.

An argument was drawn from the rule of this court that in a civil suit the court has no power to compel a physical examination of a party to the suit, but there is no similarity between the two cases, nor is there any claim that the superintendent may compel the examination of a policeman. Besides the rule that the court cannot compel an examination of a party does not rest on immunity, under the Constitution, from an unreasonable search. There is no doubt that a statute might be enacted requiring a party to submit to an examination as a condition of maintaining the suit, and many courts have held that such an examination either rests in the discretion of the court, or may be demanded by the opposite party as a matter of right.

In any view of the case, the court cannot see how it can be said that the superintendent of police is compelled by the Constitution to remain in ignorance of the physical capacity of policemen to perform the duties required of them, with the necessary consequence that the policemen may retain positions which they are incapacitated to fill and draw salaries for services they are unable to perform. Even if the examinations conducted for the purpose of ascertaining the facts should be characterized as searches of the person, they cannot be considered unreasonable.

Form of Action and Liability for Malpractice—Expert Testimony

(Carpenter vs. Walker (Ala.), 51 So. R. 60)

The Supreme Court of Alabama affirms here a judgment for damages for alleged malpractice in the setting and treating of a compound fracture of the forearm for a boy whereby it was charged that he lost his arm. It says that the action against a physician for malpractice need not be based on a contract, though it may be, and usually is. It is sufficient if based on his legal obligation. The action for malpractice is essentially in tort (for wrongdoing), and hence it is immaterial by whom the physician is employed. While a physician or surgeon may, under the same state of facts, be liable both *ex contractu* and *ex delicto*, or on contract and for breach of duty, yet the plaintiff has the option to declare against him in either form; but prior to the present Alabama Code he could not declare in both in the same action. As to the duty, care and skill required of physicians and surgeons, the rule (as twice before announced) is as follows: "the reasonable and ordinary care, skill and diligence which the law requires of physicians and surgeons in the same general neighborhood, in the same general line of practice, ordinarily have and exercise in a like case."

There was no error in allowing the question to be propounded to a medical witness, "whether it was reasonable

prudence on the part of a surgeon setting a broken limb to leave the patient for ten days without any one trained in treating wounds, and with instructions to his parents that he need not be sent for unless the hand turned black." There was evidence justifying the hypothesis put; and it was not a substitution of the witness for the jury, but was to afford them the benefit of an expert's opinion as to whether that kind of treatment was reasonable prudence.

Nor was there error in instructing the jury that if they believed from the evidence that the plaintiff broke his arm, and that the defendant was employed by the plaintiff's father (plaintiff being a minor) to treat and attend the same as a physician and surgeon, and entered on and undertook such employment, and did set or dress or treat the plaintiff's said arm as a physician or surgeon, and assumed charge of the same, then the plaintiff was entitled to receive from the defendant the care, attention and skill of an ordinarily skilled physician and surgeon. And if the jury believed that the plaintiff did not receive from the defendant such care, attention and skill, and that in consequence of not receiving the same, and without fault on the plaintiff's part, or on the part of any one else, suffered increased pain, suffering and injury, then the jury were instructed that the defendant was liable, and the jury would render a verdict for the plaintiff, and would assess his damages found from all the evidence, not exceeding the amount claimed by the plaintiff in his complaint.

Society Proceedings

COMING MEETINGS

Amer. Acad. of Ophthal. and Oto-Laryngol., Indianapolis, Sept. 25-27.
Amer. Assn. of Obstet. and Gynecol., Louisville, Ky., Sept. 26-28.
American Electro-Therapeutic Association, Philadelphia, Sept. 6-7.
American Roentgen Ray Society, Richmond, Va., Sept. 20-23.
American Urological Association, Chicago, Sept. 26-27.
Assn. of Military Surgeons of United States, Milwaukee, Sept. 26-29.
Indiana State Medical Association, Indianapolis, Sept. 28-29.
Medical Society of the Missouri Valley, Omaha, Neb., Sept. 7-8.
Michigan State Medical Society, Detroit, Sept. 27-28.
New Mexico Medical Society, Las Vegas, Sept. 6-9.
Pennsylvania State Medical Society, Harrisburg, Sept. 25-28.
Washington State Medical Association, Spokane, Sept. 5-7.
W. Va. State Med. Assn., White Sulphur Springs, Sept. 20-22.
Wyoming State Medical Society, Thermopolis, Sept. 4-5.

AMERICAN OPHTHALMOLOGICAL SOCIETY

Forty-Seventh Annual Meeting, held at New London, Conn., July 11-12, 1911

(*Concluded from page 689*)

Sarcoma of the Chorioid; Neuromata of the Ciliary Nerves

PROF. E. FUCHS, Vienna: I believe these to be the smallest specimens of sarcoma of the chorioid hitherto known. There were three cases in all. In one, the sarcoma was so minute that it could not be seen by means of the ophthalmoscope.

The only positive evidence that these small tumors are sarcomas would be an aggressive and destructive growth, which could not be expected at such an early stage. The diagnosis must, therefore, be based on the character of the cells compoisng them.

In the first and third cases, the tumor was composed of closely packed spindle cells, with scarcely any pigment. In the second case, the pigment cells composing the tumor assumed in part a polygonal shape, and lay contiguous to one another, like spindle cells. We may learn from these cases that the sarcoma may originate in the layer of large vessels termed Keller's layer; it may be composed of spindle cells from the beginning, and deep pigmentation may be present from the very start. I have found neuromata in two atrophic eye-balls.

In both cases, the minute tumors were composed nearly exclusively of nerve-fibers; so that they were genuine neuromas, and not neurofibromas.

DISCUSSION

DR. GEORGE E. DE SCHWEINITZ, Philadelphia: A few years ago, Dr. E. A. Shumway, of Philadelphia, and I showed two growths of the chorioid. Dr. Fuchs, in a recent paper on sarcoma, referred to these, and stated that we had left it open whether they were to be regarded as sarcomas or degenerated chromatophores. He has just pointed out that young sarcomas never form chromatophores. One of our cases was a melanoma, and the other a sarcoma of the chorioid.

Cases of Pulsating Exophthalmos Cured by Ligation of the Common and Internal Carotids

DR. WILLIAM H. WILDER, Chicago: Both cases were due to blows on the head. Exophthalmos was marked, but pulsation was very slight. In one case relief immediately followed ligation of the common carotid, and a permanent cure resulted. In the other case ligation of the common carotid gave relief from the bruit and the head noises, but the exophthalmos did not recede completely. A recurrence of the bruit and an increase in the exophthalmos took place two months after the ligation. The internal carotid of the same side was then ligated, with complete relief of all the symptoms, and the results have been permanent up to date. A slight impairment of speech and paresis of the left forearm followed ligation of the internal carotid.

DISCUSSION

DR. SAMUEL D. RISLEY, Philadelphia: I should like to inquire whether, after the ligation of these arteries, if there were intra-ocular hemorrhages in either of the cases. Some time ago, I reported one instance in which, when I made an ophthalmoscopic examination, forty-eight hours afterward, I found extensive hemorrhages that had been absent before the operation.

DR. CARL FISHER, Rochester, Minn.: Dr. Charles Mayo operated about a year ago in a similar case. This patient had had a pulsating exophthalmos of the left eye, for which a ligation of the common carotid had been done some time before. Through some accident, this eye had afterward been lost. Three years later, the patient developed pulsating exophthalmos of the right eye. The vision remained fair, but was slowly diminishing. Dr. Mayo clamped a stout tin spring around the vein. He then closed the artery as much as he could allowing vision to remain, so as to develop collateral circulation through the basilar arteries. It is hoped that enough collateral circulation may be developed to enable the woman to retain her vision.

DR. EMIL GRUENING, New York City: I have had two cases of pulsating exophthalmos; both patients were operated on by ligation of the common carotid. There was almost immediate improvement of the sight, and no hemorrhage occurred.

DR. WILLIAM H. WILDER: There were no retinal hemorrhages in either of my cases. I should hesitate to ligate the ophthalmic vein until I had resorted to other procedures, as I should fear embolism somewhere in the body, particularly the brain.

Phantom Intra-Ocular Tumor

DR. ARNOLD KNAPP, New York City: The patient was a woman, aged 73, with protrusion of the left eye. Palpation at the margin of the orbit was negative, except at the upper inner angle, where a nodular pulsating mass was felt. The optic nerve was normal. The fundus showed arteriosclerosis of the vessels, with a few small hemorrhages; and below, in its periphery, there was a shallow detachment. The pupil was dilated, and there was a round, brownish swelling back of this on the temporal side. Tension was normal. The diagnosis of intra-ocular tumor with orbital extension seemed clear. The growth was thought to be a melanosarcoma of the ciliary body. Enucleation showed cystic degeneration of the retina, with distinct changes in the epithelium in the pars ciliaris retinæ. The tumor recognized clinically was presumably a large cyst or detachment, which ruptured when the eye was opened immediately after removal.

The Field of Vision in Tabetic Atrophy of the Optic Nerve

PROF. E. FUCHS, Vienna: Uhlhoff states that the cases of tabetic atrophy in which the field of vision presents a central

scotoma constitute about 2 per cent. of all the cases of tabetic atrophy. According to my experience, they are more common; as I could pick out not less than thirty from the histories of my private patients alone. The common opinion is that the central scotoma is not a sequela of the tabes, but is to be considered as a complication with a simultaneous syphilitic retrobular neuritis. I believe, however, that we have to do with the same kind of gray degeneration that is characteristic of tabetic atrophy in general. As a rule, the spots of gray degeneration are located in the optic nerves, but they may exceptionally locate themselves farther back in the chiasma. According to my belief, bitemporal hemianopia is in most cases of tabes to be considered, not as an accidental complication due to hypostatic inflammation, but as a genuine tabetic affection.

DISCUSSION

DR. GEORGE DE SCHWEINITZ, Philadelphia: I should like Dr. Fuchs to tell us whether the results of his observation indicate that the excessive use of tobacco and alcohol has any bearing on the existence of the central scotoma. I had always supposed that instances of central scotoma were much rarer than 2 per cent.

DR. LUCIEN HOWE, Buffalo, N. Y.: I have found that if the center of the eye did not correspond with the center of the arc of the perimeter, it was not difficult to get almost any kind of field that was desired.

DR. E. FUCHS: It was not 30 per cent. of cases of tabetic atrophy that showed a central scotoma, but thirty cases out of many hundreds. All the patients were men, as is usual in tabes; and there was none of them who did not smoke. The man from whom the specimen came was a heavy smoker. If it had been a toxic scotoma, the stopping of the use of these drugs would have brought about an improvement in the scotoma. I used MacHardy's self-regulating perimeter, the ordinary perimeter, and the campimeter. If you examine the patient on subsequent days, you will not find the results exactly alike, because the fixation is not sure.

The Mechanics of Choked Disk

DR. MYLES STANDISH, Boston: Following an operation on the mastoid, there was thrombosis of the lateral sinus; although it still remained permeable. The patient was operated on, ligature of the jugular vein being done. There was an increase of choked disk on the side operated on, followed by similar appearances in the other eye. These symptoms finally subsided, and the patient recovered.

Cilioretinal Vessels

DR. EDWARD JACKSON, Denver: Such vessels have been observed in 1,000 eyes, with notes of their position in each case. They are almost invariably arterial branches, and can usually be traced from their point of entrance into the optic nerve head. In doubtful cases, arteries may be distinguished from veins by noting which branches of the central retinal vessels they cross. Visible arterial pulsation under normal conditions appears to be more frequent in cilioretinal branches than in branches of the central retinal artery. This may be due to their manner of entering the eye-ball.

DISCUSSION

DR. B. A. RANDALL, Philadelphia: It is certain that, while the veins are far less frequently seen in this condition than are the arteries, they constitute a larger proportion than is indicated by Dr. Jackson, while it is almost invariable that vein crosses vein, and artery crosses artery, this is not always so.

Case of Retinitis Pigmentosa Complicated by an Albuminuric Retinitis

DR. T. R. HOLLOWAY, Philadelphia: The patient was a male, aged 34, who dated the onset of his ocular trouble from an attack of measles that he had had at the age of 9. Nephritis had been known to exist for about four years. Each eye showed lenticular and vitreous opacities. The disks were partially atrophic; and, in addition, the left disk had a distinct blurring of the temporal margins. The retinal vessels were contracted. In each macular region there was a stellate figure, and in the mid zone and periphery was a marked pigmentation characteristic of a retinitis pigmentosa. The fields were contracted to about 15 degree.

A Case of Embolism of the Right Central Artery in a Boy Aged 8

DR. E. GRUENING, New York City: The boy was examined twenty-four hours after the occurrence of the blindness of the right eye, and it showed the ophthalmoscopic picture of embolism of the central retinal artery. In the white zone surrounding the cherry-red spot there were numerous hemorrhagic patches. At present, white patches of peculiar appearance occupy the site of the macula. Embolism of the central retinal artery in children seems to be very rare. The secondary changes in the fundus are unusual.

DR. ALEXANDER DUANE, New York City: I had a case of bilateral partial embolism in a boy of 14, the patient being affected with heart disease.

DR. WILLIAM K. ROGERS, Columbus, O.: A case of the kind once occurred in my own practice. The patient was a boy of 10, who presented a characteristic picture of embolism of the central artery, but is was accompanied with a history of endocarditis, associated with chorea.

Congenital Deviations of the Eyes

DR. ALEXANDER DUANE, New York City: The characteristic marks of a congenital deviation cannot always be relied on. The most frequent forms of congenital deviation are the following: insufficiency of the superior rectus with or without secondary deviation; insufficiency of the inferior rectus; insufficiency of the external and internal rectus, usually combined so as to constitute a special syndrome. In most cases, the anatomic conditions underlying the deviations probably consist of aphasia or other defects of the muscles themselves. Contrary to what is generally supposed, the symptoms of congenital deviation are often important and cause permanent inconvenience. They comprise obvious squint [which may be present at the outset or may not develop until late in childhood), torticollis, asthenopia and aprosexia. The treatment consists in operation. Each case must be judged by itself.

The Function of the Kidney Glomerules.—In his Croonian lecture before the Royal Society of Great Britain, Prof. T. G. Brodie brought out a new conception of the glomerular activity. Recent work, he says, has conclusively shown that the usual explanation of the glomerules, that they act as filters, is incorrect. Excluding filtration, the structural details point to a relation to the blood-pressure in the work of the glomerules, and he suggests as their function the setting up of a pressure head by which the watery part of the urine is driven through the very long and narrow tubules. Its activity would be, therefore, one of propulsion, and he suggests that the glomerulus be called a "propulsor." He finds, by an approximate calculation, that to drive the fluid through the tubules during the height of the kidney activity, a pressure head about equal to that in the glomerular capillaries is required. In support of this he offers the microscopic findings in the kidney after activity. The capsules of Bowman are greatly distended, the glomeruli are moderately enlarged and no longer fill the capsular spaces, and the tubules are straightened out and distended. All these changes are exaggerated by anything that favors the exaggeration of this intratubular pressure, such as a high arterial blood-pressure or obstruction to the outflow through the ureter. The kidney, moreover, is tense and hard, and its capsule stretched to the utmost. The presumption of the propulsor function of the glomerules he says explains the existence of a firm and inextensible capsule to the kidney, and also such phenomena as the maximum ureter pressure, the dependence of the rate of discharge from the kidney on the general blood-pressure and dilatation of the renal arteries, etc. Applying this theory, he says, to the study of the action of diuretics in animals in which the blood-pressure has been lowered so that the propulsion can no longer occur, we obtain evidence as to the parts of the renal tubules acted on by these different substances.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

July

1 *Studies on Circulation in Man and the Influence of Oxygen Inhalation on Circulation in a Case of Cyanosis. G. N. Stewart, Cleveland.
2 *Further Data on Use of Certain Antimonial Compounds in Treatment of Experimental Trypanosomiasis. L. G. Rowntree and J. J. Abel, Baltimore.
3 The Liver in Its Relation to Anaphylactic Shock. C. Voegtlin and B. M. Bernheim, Baltimore.
4 Study of the Antiseptic and the Pharmacologic Properties of Meta-Cresol Acetate. I. Greenwald, New York.
5 Action of Senecio Alkaloids and the Causation of Hepatic Cirrhosis of Cattle (Pictou, Molteno or Winton Disease). A. R. Cushny, London.
6 Properties of Several Species of the Polyporaceæ and of a New Variety of Clitocybe, Clitocybe Dealbata Sudorifica, Peck. W. W. Ford and J. L. Sherrick, Baltimore.
7 *Relation of the Adrenals to Pancreatic Activity. C. W. Edmunds, Ann Arbor.

1. Influence of Oxygen on Circulation.—In a man with pulmonary emphysema, chronic bronchitis, and recurring cyanosis not associated with dyspnea, the blood-flow in the hands was increased by oxygen inhalation by an amount varying from 30 to 70 per cent. of the combined flow in the two hands in experiments made on different days during a period of two months. In general, a greater percentage increase under oxygen inhalation was obtained by Stewart when the initial flow was relatively small than when it was large. In this patient the normal flow (without oxygen inhalation) was habitually large, quite as large as in any of the normal cases studied, and larger than the average of the normal cases. The action of oxygen on the blood-flow was not associated with any sensible change in the respiratory movements, nor with any certain change in the alveolar carbon dioxid tension. Stewart is of the opinion that it was therefore conditioned in some way by the increased alveolar oxygen tension. Oxygen inhalation produced no sensible change in the rate of the blood-flow in the hands of two normal men.

2. Antimonial Compounds.—Many experiments on trypansome infected rats were made by Rowntree and Abel to determine the therapeutic value of antimonial compounds. They found that although the antimony salt of succinic acid is capable of causing the disappearance of trypanosomes, yet in the vast majority of cases its action is of very short duration. It is irritant locally, more toxic than the sodium antimony thioglycollate or the triamide of antimony thioglycollic acid, and much less efficient in the treatment of experimental trypanosomiasis.

7. Adrenals and Pancreatic Activity.—The results obtained by Edmunds in his experiments would seem to dispose finally of any objection which could be raised against the explanation that the inhibition of the pancreas by epinephrin (adrenalin) is due to the vasoconstriction and consequent anemia of the gland. Briefly, the evidence in favor of such a view is as follows: After doses of ergotoxin which paralyze the vasomotor nerves, epinephrin no longer causes constriction of the vessels of the gland, nor does it inhibit it. Pituitary extract will not inhibit unless it constricts the vessels of the gland. Nicotin and strychnin in their primary stimulant doses constrict the vessels of the pancreas and inhibit its action. Later, after the paralytic stage has come on, neither drug lessens the blood-supply to the gland, nor does either cause inhibition. Other drugs, such as strophanthin, pilocarpin and barium chlorid, which constrict the vessels of the gland, cause inhibition. If, on the other hand, they increase the blood-flow to the gland, as shown by increasing its volume, they have a tendency to accelerate the flow. Direct electric stimulation of the splanchnic nerve will produce precisely the same inhibition as will chemical stimulation.

Laryngoscope, St. Louis

July

8 Atypical Mastoiditis. E. A. Crockett, Boston.
9 Id. T. J. Harris, New York.
10 Case of Nasal Sarcoma Removed by Intranasal Operation; Recurrence After Thirteen Years; External Operation and No Return After Three and a Half Years. C. H. Knight, New York.
11 Three Cases of Fibrous Polyp of Nasopharynx with Exhibition of Specimens. W. A. Wells, Washington, D. C.
12 Accidents During Tonsillectomy and Sequela of Operation. A. O. Pfingst, Louisville, Ky.
13 Progress in Treatment of Laryngeal Carcinoma Since Organization of the American Laryngological Association. J. S. Cohen, Philadelphia.
14 Congenital Web of Esophagus. J. P. Clark, Boston.
15 Atypical Mastoiditis. J. A. Stucky, Lexington, Ky.

Cleveland Medical Journal

July

16 Tuberculin, Its Use and Administration. E. R. Brooks, Cleveland.
17 *The Blood in Pertussis; Report of 120 Cases. N. P. McGay, Cleveland.
18 Case of Probable Abscess of the Larynx, Requiring Intubation, Followed by Inspiration Pneumonia. J. J. Thomas, Cleveland.
19 *Interesting Case of Major Hysteria, Successfully Treated by Reeducation. H. H. Drysdale, Cleveland.
20 Circulation After Forcible Reduction of Congenital Club-Foot. W. G. Stern, Cleveland.
21 Chemical Condition of Lake Water After Chlorin Treatment. H. D. Haskins and S. A. Cleaveland, Cleveland.
22 Hypertension of the Portal System. M. Schott, Cleveland.
23 Routine Bacteriologic and Chemical Examinations of the Cleveland Milk-Supply. H. O. Way, Cleveland.

17. Blood in Pertussis.—McGay examined the blood in forty-six cases of pertussis. In all the cases a leukocytosis of from 7,600 to 46,000 was found, as well as a lymphocytosis, with a decrease in the polymorphonuclears. Comparing the averages in forty-six pertussis cases with ten normal cases, there is an average increase of 6,070 in the leukocyte count, or approximately 33 per cent.; an increase of 1.9 per cent. in the large mononuclears, and of 5 per cent. in the lymphocytes, and a decrease of 6 per cent. in the polymorphonuclears; the transitionals, eosinophils and mast cells remaining approximately the same. In bronchitis and pneumonia the polymorphonuclear count is much higher than in pertussis, while the lymphocyte count, both small and large, is considerably decreased. The lower the leukocyte count, the higher the lymphocytes and the lower the polymorphonuclears; and as the leukocytes increased so did the polymorphonuclears, while the lymphocytes decreased in relatively the same proportion. The cases showing the lowest leukocyte count at the beginning of the child's coughing were the ones soonest well of the disease, except in one case, which held out as long as any, while another case had a recurrence with a count very similar to the one listed. The only fatal cases in the 120 directly attributable to whooping-cough were the ones (five in number) showing the highest leukocytosis. Four of the five fatal cases were caused by pneumonia complicating the pertussis; the fifth death resulting from gastro-enteritis.

19. Major Hysteria.—The case reported by Drysdale was of interest on account of the unusual combination of somatic phenomena appearing in one patient, i. e., hysterical paraplegia, multiple contractures, hemianesthesia, hyperesthetic zones, amblyopia, dyschromatopsia, unilateral anosmia and ageusia, bradylalia, amnesia, contraction of the psychic functions, etc.

Journal of South Carolina Medical Association, Charleston

July

24 *Transmission of Typhoid and Its Prevention by Vaccination. A. Lambert, New York.
25 *Herniotomy in Youth and Old Age. A. C. Baker, Charleston.
26 *Raynaud's Disease. T. E. Wannamaker, Cheraw.
27 Treatment of Typhoid. J. Forrest, Charleston.

24, 25 and 26. Abstracted in THE JOURNAL, June 3, 1911, p. 1679.

Illinois Medical Journal, Springfield

August

28 Ante-Mortem and Post-Mortem Examinations of John Junkins. H. J. H. Hoeve, Des Moines.
29 *Experimental Transplantation of Legs. V. D. Lespinasse, Chicago.
30 Diagnosis of Associated Diseases of the Eye and Nasal Accessory Sinuses. F. Brawley, Chicago.
31 Internal Secretion of the Thyroid. A. Werelius, Chicago.
32 Active Immunization in Tuberculosis. H. J. Achard, Chicago.
33 *Bisulphate of Quinin in the Treatment of Acute and Subacute Gonorrheal Urethritis. A. E. Mowry, Chicago.

34 Treatment of Syphilis; a Retrospect and a Prospect. E. A. Fischkin, Chicago.
35 Technic for the Intravenous Injection of Salvarsan. L. B. Baldwin, Chicago.
36 Plea for the Borderline Case. F. E. Auten, Belleville, Ill.
37 Treatment of Hemorrhoids Under Local Anesthesia. C. J. Drueck, Chicago.
38 Religion and Medicine. J. R. E. Craighead.

29. Abstracted in THE JOURNAL, June 10, 1911, p. 1747.

33. **Bisulphate of Quinin in Acute and Subacute Gonorrheal Urethritis.**—Mowry has used bisulphate of quinin irrigations in fourteen cases of acute gonorrheal urethritis, and he says his results have been gratifying in most of the cases. Fifty per cent. of the patients have apparently been cured in the course of two weeks. In using the solution of bisulphate of quinin for irrigation purposes, Mowry begins with a solution of 1 to 3,000, and gradually increases the strength to 1 to 1,500. He uses the solution as warm as the patient can comfortably bear, with care always taken to avoid mechanical irritation to the meatus by the irrigating tip, and that the flow is continuous by not putting on too much pressure and still putting on enough to insure the solution getting well into the urethra. He has also used the above-described solutions in two cases of cystitis 1 to 5,000 with good results, and in four cases of chronic posterior urethritis with a fair result. In the latter cases he used the solution 1 to 400 in form of an instillation, using the Ultzman deep urethral syringe. As an anterior injection for the patient's own use, Mowry makes the strength of the solution 1 in 200 to 1 in 1,000.

St. Louis Medical Review

July

39 Scoliosis. A. O'Reilly, St. Louis.
40 Etiology and Diagnosis of Pellagra. S. T. Rucker, Memphis, Tenn.
41 The Diagraphoscope. R. D. Carman, St. Louis.
42 Spread of Tuberculosis and How to Prevent It. L. Weiss, Newark, N. J.
43 Gunshot Wounds of the Inferior Vena Cava Without Symptoms of Internal Hemorrhage. J. D. Bloom, New Orleans.
44 Crotalin in the Treatment of Pulmonary Gangrene. T. Mays, Philadelphia.
45 Naphtha Soap; Its Dangers. B. M. Ricketts, Cincinnati.
46 The State and the School Child. F. A. Tucker, Noblesville, Ind.

Journal of American Public Health Association, Columbus

July

47 *Antityphoid Vaccination in American Army. F. F. Russell, U. S. Army.
48 Mayors and Municipal Health. J. A. Kingsbury, New York.
49 Vital Statistics in the Promotion of Public Health. W. H. Guilfoy, New York.
50 Occupational Statistics for Tuberculosis in Wisconsin. L. W. Hutchcroft.
51 Garbage Receptacles. P. M. Hall, Minneapolis.

47. **Antityphoid Vaccination in American Army.**—In the United States Army the vaccination against typhoid was begun in March, 1909, and up to Aug. 1, 1910, 11,771 persons were vaccinated. The total number of doses administered was 31,556. It has been the practice to give three doses at ten-day intervals to as many volunteers as possible. Seventy-five per cent. have received the full course of three doses; 21 per cent. have received two doses, and only 4 per cent. have failed to receive more than one dose. The failure to receive the second dose has sometimes been due to refusal, but just as often to change of station, discharge, desertion, etc. The first dose is 500,000,000 bacteria, the second and third 1,000,000,000 each. Ninety-five per cent. of the men had little or no fever or discomfort, aside from the local reaction. This consists of a somewhat red and tender area at the point of inoculation, which is rarely troublesome, and usually disappears in from forty-eight to seventy-two hours. Among the vaccinated men, three cases of typhoid have occurred, while, during the same length of time, there were 306 cases among the unvaccinated. The three cases were all mild and ended in recovery. Russell believes that the first case was probably infected immediately before or after receiving the first dose, and was admitted to the hospital soon after the second; the diagnosis was confirmed by isolation of the bacilli from the stools. The other two cases were so mild that, in the absence of blood cultures, there remains some doubt as to the correctness of the diagnosis.

Bulletin of the Manila Medical Society, Manila

June

52 Paratyphoid-Like Bacillus Isolated from a Dog. E. H. Ruediger, Manila.
53 Myiasis Narium. I. W. Brewer, U. S. Army.
54 *Duration of Passive Immunity Against Tetanus. E. H. Ruediger, Manila.

54. **Duration of Passive Immunity Against Tetanus.**—According to the results obtained by others and by himself, Ruediger concludes that passive immunity against tetanus is of short duration. Where alien serum is used immunity disappears in about three weeks; with homologous serum the duration may be about two months. The longest period of passive immunity conferred by alien serum reported on seems to be six months, observed by Roemer and Sames. Passive immunity conferred to the guinea-pig by a moderate dose of tetanus antitoxin from the horse is of less than three weeks' duration. Passive immunity from a large dose (300 units) of alien serum appears to be only a few days' longer duration than that from a smaller dose (100 units).

Western Medical Review, Omaha, Neb.

August

55 Roentgen-Ray Method of Locating Exact Position of Foreign Body Within the Eye-Ball; Special Reference to Bowen-Sweet Method. W. H. Mick, Omaha.
56 Localization and Extraction of Intra-Ocular Foreign Bodies. J. M. Patton, Omaha.
57 Case of Congenital Stenosis of the Pylorus Treated Surgically. G. Haslam, Fremont, Neb.
58 After-Treatment in Surgery of the Digestive Organs. B. R. McGrath, Grand Island, Neb.
59 Conservation of Vision. F. S. Owen, Omaha.
60 Practice of Medicine—Its Success and Failure. F. A. Butler, Harvard, Neb.

American Journal of Surgery, New York

August

61 Malignant Disease as a Problem of Modern Surgery. J. B. Deaver, Philadelphia.
62 Abdominal Pain; Its Diagnostic Significance in Surgical Diseases. J. P. Warbasse, Brooklyn.
63 Indications for Mastoid Operation. F. E. Franchere, Sioux City, Iowa.
64 Rhinophyma; Operative Treatment. R. S. Fowler, Brooklyn.
65 Certain Limitations of Living Pathology. D. Roberts, Brooklyn.
66 *Study of Cancer. J. A. McGlinn, Philadelphia.
67 Early Diagnosis of Cancer of the Skin. W. S. Gotthelf, New York.
68 *Acute Angulation and Flexure of the Sigmoid a Causative Factor in Epilepsy. W. H. Axtell, Bellingham, Wash.

66. **Cancer.**—This study by McGlinn is taken from the records of 8,515 post-mortem examinations made at the Philadelphia General Hospital from Sept. 12, 1867, to Sept. 1, 1909. In this series there were 457 cases of cancer. One patient out of every nineteen posted (18.6) had cancer. Cancer was found in males in 274 cases and in females in 179 cases; the sex not being specified in four cases. Eliminating the organs peculiar to the sex, the percentage for males was 72.5 and for females 27.5. The frequency as to age was as follows: Twenty to 39 years, forty-four cases; 40 to 49 years, ninety-three cases; 50 to 59 years, 107 cases; 60 to 69 years, 121 cases; 70 to 79 years, sixty-seven cases; 80 and over, 113 cases. The location of the cancer was: Stomach, 168 cases; uterus, forty cases; breast, thirty-eight cases; pancreas, thirty-six cases; esophagus, thirty-one cases; liver, twenty-six cases; rectum, eighteen cases; gall-bladder, eleven cases. Chronic tuberculosis of the lungs (healed foci) was found associated with cancer 197 times; acute pulmonary tuberculosis, seventeen times; tuberculous peritonitis, five times, a total of 219 cases. Gall-stones were present in fifty-one cases. In the entire series of autopsies gall-stones were found in 507 of the cases. Kidney-stones in the cancer cases were found seven times. Other neoplasms noted in association with the cancer cases were as follows: fibroid of uterus, twenty-five cases; fibroid of ovary, one case; broad ligament cyst, one case; ovarian cyst, four cases; papilloma of ovary, two cases; sarcoma, one case; hypernephroma, one case. Syphilitic lesions were found in eight of the cases.

68. **Acute Angulation and Flexure of Sigmoid a Causative Factor in Epilepsy.**—Since his last report on this subject, Axtell has had two additional private cases and examined three asylum cases, making a total of ten private and twenty-six asylum cases. In the whole number of cases the same con-

ditions in varying degrees were present excepting in one asylum case. A remarkable feature in connection with this case was that the abdominal examination excluded the possibility of the internal trouble being present. In this particular case the epilepsy was produced by a depressed fracture. This was the first case of a normal condition of the rectum and sigmoid found at the asylum. There was no angulation or impaction whatsoever; no gaseous distention of the cecum or history of persistent and obstinate constipation. Of the ten private patients only four persisted in the treatment for the rectosigmoidal difficulties. Of these four, three are practically relieved of the epilepsy, as well as the rectosigmoidal trouble. The fourth patient who persisted in the treatment for an acute angulation, thickening and ulceration at the rectosigmoidal juncture was made worse while taking treatment. The convulsions occurred three or four times per month. After the acute angulation, ulceration, hypertrophy and the prolapsed and impacted sigmoid were relieved, the convulsions ceased. He has had no recurrence for more than two months. The fact that the frequency of the convulsions was increased during active treatment is the most convincing evidence in Axtell's opinion that the cerebrospinal irritation was caused by the rectosigmoidal trouble.

Albany Medical Annals, New York

August

69 Chemistry of Metabolism and Its Relation to Ocular Disease. S. L. Ziegler, Philadelphia.
70 Angina Pectoris Due to Sclerosis of Both Coronaries and Embolism of the Right; Symptoms Limited to Pain. C. Stover, Amsterdam, N. Y.
71 Angina Pectoris and Disease of the Coronary Arteries. T. Ordway, Albany.

California State Journal of Medicine, San Francisco

August

72 Surgery of Nose, with Free Transplantation of Bone. L. Eloesser, San Francisco.
73 *Intestinal Indigestion in Adults. E. Schmoll and W. C. Alvarez, San Francisco.
74 *Intestinal Indigestion from a Surgical Point of View. R. Smith, Los Angeles.
75 Case of Carcinoma of the Eyelid. H. A. Kiefer, Los Angeles.
76 *Dermatitis Venenata from Proprietary Hair Dye. E. D. Chipman, San Francisco.
77 *Case of Perforated Duodenal Ulcer, Operated on Fifty-Five Hours After Perforation, Complicated by Double Pleuropneumonia. L. W. Allen, San Francisco.
78 Modern Milk Feeding Station for Infants; Clinical Results. P. V. K. Johnson and P. S. Chancellor, Chicago.
79 Prevention of Postobstetric Lesions. D. Hadden, Oakland.
80 Borderline Cases of Ear Disease. P. A. Jordan, San Jose, Cal.
81 *Significance and Treatment of Abdominal Pain. C. P. Thomas, Los Angeles.
82 Early Diagnosis and the Prophylaxis of Toxemia of Pregnancy. T. Coffey, Los Angeles.
83 Arteriosclerosis; Review of Cases. D. J. Frick, Los Angeles.
84 *Treatment of Epithelioma by Curetting, Followed by Cauterization with Chromic Acid and Later by Exposure to *X*-Rays. G. D. Culver, San Francisco.
85 New Tonsil-Knife, with Description of Its Use. P. Summer, San Francisco.

73. Intestinal Indigestion in Adults.—The authors' studies have shown that these patients have the greatest difficulty in handling the cellulose in their diet. Therefore, they should be given a concentrated diet of high caloric value which will tax their weakened powers of digestion as little as possible and leave no bulky residue to irritate the hypersensitive colon. Such a diet must be controlled frequently by the stool examination, and the symptoms, such as flatulence, auto-intoxication, etc., and the relative amounts of starch, meats and fats adjusted to the individual. All vegetables and starches should be cooked very thoroughly, and those, such as beans and peas, which have resistant capsules should be passed through a sieve and puréed. Contrary to expectation, this diet rarely aggravates constipation and sometimes it even improves matters by relieving spasm due to bulky, irritant masses. It is well, however, to have the patient eat plenty of stewed fruit without skins or seeds. Stool examination seems to show that the diseased intestine is absolutely unable to deal with poorly chewed food, and many an indigestion can be cured by securing better conditions in the mouth. Nothing will help the severer enteroptotic cases more than fattening. In such cases the authors generally give a diet containing 3,000 to 5,000 calories and a large amount of fat, mainly in the form of cream and butter. There is generally some repulsion and disturbance for the first three or four days, but they have not as yet found a case in which the diet had to be given up, or in which it failed to produce the desired gain in weight. During the first few days the patient should be in bed, as the sagging intestines do their work very much better when they have fallen back into place. The practice many surgeons have of "fixing" one or two of the prolapsed organs is strongly condemned by the authors. They believe it is irrational and does not take into account the condition as a whole.

74. Intestinal Indigestion.—Smith defends the surgical treatment of this condition.

76. Dermatitis Venenata.—Within a few months Chipman has met with six cases of severe dermatitis of more or less extensive distribution, the reaction in each instance following the use of "Mrs. Potter's Walnut Tint Hair Stain." This preparation was found by the North Dakota Agricultural Experiment Station to depend "for its action on paraphenylene-diamin, a substance which when oxidized by means of a solution of hydrogen dioxid becomes an intense black."

77. Perforated Duodenal Ulcer.—The purpose of Allen in reporting this interesting case is to draw attention to the fact that simple drainage to the point of rupture is all that is necessary for a permanent cure; that breaking away adhesions to see and suture the perforation may add just enough shock to change a favorable to an unfavorable termination. The patient in this case recovered.

81. Treatment of Abdominal Pain.—Thomas believes that many chronic sour stomachs in belchers are due to colitis, and curable by appendicostomy with proper after-treatment. He condemns the uncalled-for use of the hypodermic syringe. He says it is more disastrous than the uterine curet.

84. Curetting in Epithelioma.—Out of 139 patients presenting epitheliomata, forty-four with fifty-three separate lesions were treated by Culver by curettage and the application of chromic acid crystals. The tumors were located as follows: nose, fifteen; cheeks, fourteen; ear shell, seven; forehead, seven; eyelids, five; and one each on upper lip, lower lip, neck, chin and back of hand. Twelve of the forty-four patients had previously been treated by one or more methods of treatment and there was either incomplete removal or recurrence from apparent complete removal. Five of the forty-four are now under treatment. Of the remaining thirty-nine, twenty-three of whom Culver had knowledge and who had twenty-seven different tumors have remained free from recurrence for periods of time varying from a few months to five years. Seven of the remaining sixteen never had recurrences or have not had up to the present time, and of six others information is unavailable. Three had recurrences and one of the five under treatment has a recurrence, making a total of known recurrences in four patients, practically 9 per cent. Subsequent treatment of the four has been along similar lines. Eleven patients have been treated with Roentgen rays following the removal of the crust formed by the cauterization with chromic acid. The points considered in the selection of cases are these: The lesion generally has been present many months, is either a firmly indurated plate or tubercle in the skin, of shiny, waxy appearance, pinkish or yellowish in color, showing distinct dilated capillaries near its surface, or it is an ulcerated lesion showing in some part of its periphery a raised, rolled or nodular firm, waxy border which presents the characteristic dilated capillaries, and having an irregular center with an uneven, easily bleeding base that discharges a viscid fluid which dries into dirty yellowish crusts. Its appearance is often greatly changed by added infection or by previous treatment, but some of the characteristics are always present. Metastatic processes are uncommon in this type of epithelioma, but are sometimes present, and if so an entirely different treatment is required, and if inoperable it becomes the unpleasant duty of the physician to so consider it. It is this type of growth that is so frequently mistaken for lupus, but the history of its not having begun so early in life and the absence of the so-called apple-jelly nodules seen in lupus vulgaris through a glass pressed over the lesion would rule out the latter.

Journal of Minnesota State Medical Association and Northwestern Lancet, Minneapolis

August 1

86 Operative Treatment of Perforation in Typhoid. G. D. Head, Minneapolis.
87 Case of Fracture of the Neck of the Femur. H. C. Windell, Williston, N. D.
88 Enteritis in Infants and Its Dietetic Treatment. H. D. Newkirk, Minneapolis.

New York Medical Journal

August 5

89 *Relation of the Tonsil Operations to the Soft Palate and Voice. G. Hudson-Makuen, Philadelphia.
90 Reflex Affections of the Tonsil. R. B. Faulkner, Pittsburg.
91 Renal Function in Surgery, with Particular Reference to Kidney Surgery. L. E. Schmidt, Chicago.
92 Some Cases of Optic Neuritis Benefited by Operation on the Sphenoidal Sinus and Posterior Ethmoidal Cells. H. Smith, New York.
93 Diagnosis of Brain Tumors. J. E. Burns, Wheeling, W. Va.
94 Diagnosis of Incipient Pulmonary Tuberculosis. B. S. Horowicz, New York.
95 Use and Abuse of Coffee. R. E. Coughlin, New York.
96 Hysteria in a Girl of 7 Years. G. H. Nofer, Philadelphia.

August 12

97 *Chronic Appendicitis with Obscure Manifestations. N. Jacobson, Syracuse.
98 *Case of Typhoid Bacillus Cholecystitis. B. Holmes, Chicago.
99 Esthetics of Surgery. A. M. Crispin, New York.
100 Experiences with Salvarsan in Syphilis. H. Goldenberg and D. J. Kaliski, New York.
101 Medical Aspect of Life-Insurance. A. Moss, New York.
102 Prophylaxis of Social Disease. M. Glasgow, New York.
103 Treatment of Gastric Ulcer by Lenharts' Method. J. J. Gilbride, Philadelphia.
104 Two Cases of Occipital Abscess with Wernicke's Pupillary Phenomenon. I. Strauss, New York.

89. Tonsil Operation and Soft Palate and Voice.—The causes for the belief that the removal of the tonsils in some way results in an impairment of the voice, are discussed by Hudson-Makuen. He shows that normal tonsils are in no way prejudicial to phonation, but, on the contrary, they may be helpful both in directing the action of the neighboring muscles and in modifying the resonance of the oral cavity. Hypertrophied tonsils, on the other hand, are distinctly prejudicial to phonation, because they interfere with the action of the muscles, they deflect the vibrating column of breath, and impair the normal resonance of the oral cavity. Degenerate tonsils are prejudicial to phonation primarily because they are prejudicial to health, and secondarily, because they interfere with the action of important vocal organs, by setting up a catarrhal condition in the oropharynx, which results in hypertrophy of the faucial pillars, the plica and the capsule, and in numerous inflammatory adhesions binding all these parts together in one conglomerate mass. The two important indications for the tonsil operation are, to remove foci of infection and to increase or restore the functional efficiency of the respiratory, phonatory and articulatory organs; and the operation that fails to meet the requirements of these two indications is more or less of a failure. The tonsil that requires removal is always prejudicial to vocal excellence. The author is firm in his claim that the popular belief that the removal of tonsils is injurious to the voice is well founded, and it is due in large measure to careless or bad surgery.

97. Chronic Appendicitis.—In five cases cited by Jacobson the early history has always been indefinite whether the symptoms have been referable to the stomach, duodenum, gall-bladder or the large bowel, and a period varying from one year to several years has elapsed before any evidence strongly suggesting appendicular disturbance has manifested itself. However, in the end, close analysis of the symptoms and repeated examinations of the abdomen have warranted each time the diagnosis of chronic appendicitis. Jacobson emphasizes that it is essential to investigate these cases thoroughly and to exclude all other pathologic conditions before determining to remove the appendix.

98. Typhoid Bacillus Cholecystitis.—Holmes reports a case of typhoid bacillus cholecystitis without typhoid fever or gall-stones. He says that typhoid bacillus cholecystitis is an invariable attendant on typhoid, but clinical (obstructive) cholecystitis occurs only when the cystic duct is obstructed. The gall-bladder often retains the infection long after the typhoid septicemia and typhoid enteritis have passed away, and then the typhoid bacilli may, by use of cholagogues, be found in the stools. The fate of a typhoid bacillus cholecystitis is so uncertain and so surrounded with danger that the fear of a surgical operation in the course or at the beginning of typhoid should not be given too much weight. The cholecystostomy should be performed promptly and quickly with the minimum of anesthetic and the minimum of traumatism. No attempt should be made during typhoid to remove stones from the cystic duct. A later cholecystectomy will rarely be necessary.

Boston Medical and Surgical Journal

August 3

105 *Observations Regarding Relative Frequency of Different Diseases Prevalent in Boston and Its Vicinity. R. C. Cabot, Boston.
106 *Prostatic Concretions and Calculi. F. B. Lund, Boston.
107 Classification of Diabetes. F. W. White, Boston.
108 Result of Tonsillectomy. O. A. Lothrop, Boston.
109 Report of Two Cases of Pneumococcus Meningitis. J. R. Wiseman, Syracuse, N. Y.
110 *Abdominal Pain from Antero-Posterior Curvature. M. H. Rogers, Boston.
111 Anterior Dislocation of Hip. G. H. Monks, Boston.

August 10

112 Aspects of Abdominal Ptosis. J. G. Mumford, Boston.
113 *Chronic Acetanilid Poisoning a Perfectly Definite Symptom Complex. H. C. Gordinier, Troy, N. Y.
114 *Hydrocele and Its Radical Cure by the Insertion of Catgut. C. M. Whitney, Boston.
115 Concerning Nurse Training Schools. S. E. Parsons, Boston.
116 *Compression Myelitis by Aneurysm Occurring in a Tabetic. J. B. Ayer, Boston.

105. Relative Frequency of Different Diseases Prevalent in Boston.—In a hospital population of about 8,000 males over 18 years old, all of whom were carefully questioned by Cabot, 35 per cent. give a history of gonorrhea, and 11 per cent. a history of syphilis, at some period of their lives. These histories and the resulting percentages are believed to represent approximately the truth about an average sample of Boston's adult males. The Americans, Irish, English and Italians have about the same amount of both these venereal diseases. The Jews have about one-third as much syphilis and one-half as much gonorrhea as the other races. The history of an excessive consumption of alcohol was obtained in 32 per cent. of 8,356 patients questioned. The Jews show the smallest amount of alcoholism—the "Americans" the highest percentage of total abstainers. About one-fourth of all the 7,186 males who were questioned gave a history of using an excess of tobacco. The Italians appear to use rather less than the other races but the racial differences are less marked as regards tobacco than as regards alcohol and venereal disease. The statistics relating to alcohol and tobacco are regarded as an indication of the habits of a fair sample of Boston's population. Acute nephritis, chlorosis and sunstroke would appear (on the face of the records) to be decreasing. This decrease is shown by analysis, however, to be in all probability fallacious. Pyogenic infections are more than twice as numerous as any other known infection (tuberculosis included). Three Boston hospitals treated 6,892 cases of syphilis and only 4,819 of gonorrhea in the years 1903-1910 inclusive.

106. Prostatic Concretions and Calculi.—Three cases are reported by Lund. The lesson he would draw from these cases is that prostatic concretions are frequently associated with infiltration of the prostate, which makes a small, fibrous organ feel larger than it really is by rectal examination and may lead to the suspicion of malignant disease.

110. Abdominal Pain from Anteroposterior Curvature.—Rogers reports two cases in support of his claim that an anteroposterior spinal curvature may be the cause of abdominal pain simulating appendicitis, kidney disease, etc. In these two cases correction of the deformity gave relief from the pain.

113. Chronic Acetanilid Poisoning.—A study of the cases recorded in the literature and personal observation have convinced Gordinier that the ingestion over a considerable period of time of acetanilid or related coal-tar products is productive of a definite symptom-complex, which is highly suggestive, if not absolutely diagnostic of poisoning by this group. The subjective symptoms are great general weakness, nervous excitability, insomnia, loss of appetite, digestive disturbances, palpitation, dyspnea, numbness and weakness of the extremities, pain in the region of the liver and spleen and faint

attacks. The chief objective symptom is cyanosis, which is often extreme but usually fluctuating in intensity, accompanied by marked pallor of the mucous surfaces and without clubbing of the fingers. The blood changes are quite characteristic and due to the destructive action of a hemolytic poison circulating in the blood stream, which produces a secondary anemia variable in degree. The erythrocytes are diminished in number, they often present nucleated forms, show granular stippling, stain poorly and are variable in size and form. There is usually a moderate leukocytosis of the polymorphonuclear variety, and there is often a relative increase of the lymphocytes. The appearance of the blood as it stands on the finger tip or the ear is very suggestive; it is either of a bluish-black color or chocolate in appearance. The coloration of the plasma renders the estimation of the hemoglobin quite difficult.

The spleen has been found enlarged in most of the well-observed cases, and it is usually tender both on palpation and percussion. The liver is slightly increased in size and is also tender on pressure. The heart is usually found enlarged, the transverse diameter being increased and the apex beat being displaced downward and outward. The heart sounds are feeble, and adventitious murmurs are frequent; systolic, mitral and tricuspid murmurs are common, as are basic systolic murmurs. These murmurs are probably dynamic in origin and due to the loss of tonicity of the heart muscle, as they disappear *pari passu* with the diminution in size of the heart and improvement of the blood on the withdrawal of the acetanilid. The mitral and tricuspid murmurs are, doubtless, caused by relative leakage, while the basic murmurs are hemic in origin. The urine is usually dark brown or black in color and gives the characteristic indophenol reaction. It may contain blood pigments in the form of methemoglobin or hematrophorphorin; bilirubin is common; glycuronates may be present. It is interesting to note that the ratio of the sulphates has been found reversed. In Gordinier's first case, the ratio being 16 to 1, only a comparatively few milligrams of the oxidized sulphur being eliminated in the form of inorganic sulphates. Dextrose was found in both of his cases, and probably exists in small amounts in most cases. Gordinier has been unable to find any mention in the literature of trophic changes in the way of ulcerations of the skin such as occurred in one of his cases. That these ulcerations were due to the effects of acetanilid seems probable, as most other causes could be excluded.

114. **Radical Cure of Hydrocele.**—The method used by Whitney consists of the insertion of sterile catgut into the cavity of the tunica vaginalis. It is less toxic than phenol, less painful than iodin and more certain than either of them. By it an inflammation of the sac is immediately produced and as the fluid resulting from this is slowly absorbed, an adhesion of the walls occurs with obliteration of the sac and a permanent cure of the disease.

116. **Compression Myelitis by Aneurysm in Tabetic.**—A middle-aged colored man with admitted history of early syphilis suffered for two years with cramp-like pains, mostly in the limbs. For less than a month sensory disturbances were present, at first numbness, later anesthesia below nipples; also recently loss of sphincter control. On examination the pupils were found to be unequal and to react sluggishly to light, and knee-jerks absent. A large, pulsating aneurysm in the back readily explained the anesthesia and paralysis of the lower limb, but did not explain flaccidity and loss of reflexes.

At autopsy the aneurysm was found to have eroded parts of four vertebræ and to compress the cord in the upper dorsal region to such an extent as to cause severe distortion. The pressure exerted caused the degenerations expected—Gower's and the direct cerebellar tracts upward, pyramidal tracts downward—except in one instance, namely, the posterior columns which were free from evidence of recent degeneration. Referring to Weigert sections it was evident that the man had pretty well-marked posterior tract degeneration of long standing; there was not a section from sacral to cervical but which showed marked posterior root atrophy. On this field of posterior column fibers no fresh degeneration appeared.

Ayer believes that in this case there were evidently two cord lesions, one of ancient date, tabetiform in character; the other, acute and caused by pressure of the aneurysm. The older process probably accounted for the symptoms of the previous two years, the pressure effects, for the culminating and serious symptoms of paralysis and anesthesia which so overshadowed the older disease.

Medical Record, New York

August 5

117 Prevention of Epidemics of Infantile Paralysis. M. A. Starr, New York.
118 Epilepsy and the Epileptic Temperament. E. L. Hunt, New York.
119 *Case of Anaphylaxis. W. S. Thomas and W. K. Terriberry, New York.
120 Limelight on Pneumonia. J. R. Mitchell, Fort Worth, Texas.
121 Three Cases of Non-Parasitic Cyst of the Spleen. H. A. Royster, Raleigh, N. C.
122 Chronic Blood Infection Successfully Treated with Staphylococcus Aureus Vaccine. T. W. Beeman, Perth, Ontario.
123 Heat Waves and Heat Strokes; Climatic Currents, Atmospheric and Oceanic. J. Knott, Dublin, Ireland.

August 12

124 A Darwinian Interpretation of Anaphylaxis. R. G. Eccles, Brooklyn.
125 Treatment of Epilepsy. E. L. Hunt, New York.
126 Fact and Fancy About the Hookworm. H. J. Nichols, U. S. Army.
127 Recent Repair of the Cervix. G. G. Speer, Los Angeles.
128 Personal Reminiscences of Lord Lister. L. H. Hill, Montgomery, Ala.

119. **Case of Anaphylaxis.**—The patient received 3,000 units diphtheria antitoxin subcutaneously in the abdominal wall. There was no bleeding through the needle. Antitoxin was administered with the patient in a recumbent posture. At the end of five minutes he felt well and arose, but began to sneeze continuously and his nostrils became obstructed. He soon grew dizzy and complained that everything was growing dark. About fifteen minutes after receiving the injection he was cyanotic and his inspiration was noisy and difficult. Preparations were made for intubation of the larynx, if the necessity should arise. He raised himself on one elbow in the bed, laboring for breath, with frequent cough and expectoration of pinkish serum. His face, especially about the eyes, was swollen. The conjunctivæ were injected; the skin was cold and covered with perspiration, and the pulse was absent in both radial and brachial arteries—even the apex beat not being palpable. A hypodermic injection of atropin sulphate, gr. 1/100, and strychnin sulphate, gr. 1/30, was administered. In a few moments the respiration became more quiet and at the end of fifteen minutes the patient sank back to the recumbent posture and the serous expectoration ceased. At this time the patient had an urgent desire to defecate and passed a large, brown semiformed stool. Twenty-five minutes after the injection of antitoxin the radial pulse became barely palpable. The blood-pressure, however, was too low to be recorded with the sphygmomanometer. The skin all over was brightly flushed. The tongue was swollen, its edges showing the impressions of the teeth; the soft palate and uvulva were edematous and their vessels were injected.

Two hours after the serum injection the patient drank a pint of water which he promptly vomited. The regurgitated liquid was pink and frothy. During the efforts at vomiting the pulse-rate sped up to 150 but afterward dropped to 96. At three and one-half hours the arterial pressure was about 105 m.m. The patient went quietly to sleep about four hours after the antitoxin injection, his symptoms having now disappeared. Examination of the first urine voided after the antitoxin injection showed a specific gravity of 1.032, neutral reaction, no albumin, a trace of glucose. No further symptoms developed until nine days later, when a general urticaria appeared with much edema of the eye-lids. This continued three days and then disappeared.

Lancet-Clinic, Cincinnat.

August 5

129 The Medical Examiner. W. E. Grant, Louisville, Ky.
130 Poisonous Effects of Turpentine. C. H. Wintsch, Newark, N. J.
131 Adams-Stokes' Disease. L. H. Newburgh, Cincinnati.
132 Ohio Medical College at End of Civil War. T. C. Minor, Cincinnati.
133 Obstetrics. W. Gillespie.

American Journal of Diseases of Children, Chicago

August

134 *Occurrence of Infantile Paralysis in the United States and Canada in 1910. R. W. Lovett, Boston.
135 *Cerebral Forms of Poliomyelitis. H. Koplik, New York.
136 *Infantile Paralysis; Spinal Form. J. L. Morse, Boston.
137 *Control of Epidemic Poliomyelitis. S. Flexner, New York.
138 Infantile Paralysis. J. H. M. Knox, Baltimore.
139 *Rôle of Mineral Salts in the Metabolism of Infants. R. R. Hoobler, New York.

134, 135, 136 and 137. Abstracted in THE JOURNAL, July 8, 1911, p. 152.

139. **Mineral Salts in Metabolism of Infants.**—Hoobler discusses the part which mineral salts play in carrying on the physiologic functions of the body and in what manner they contribute to the various pathologic processes to which the infant and young child are subject. He records fully his results in a series of metabolism studies made on a perfectly healthy infant, 9 months old, who had been fed on cow's milk from the time of birth. Briefly, he found that salts are necessary to maintain life. They are best absorbed and utilized when in organic combination with food-stuffs. There are marked differences in the salt content of mother's and cow's milk which should be considered in artificial feeding. Certain pathologic conditions arise in which certain of the salts are not absorbed, even though in abundance in the food. In certain other pathologic conditions salts are actually withdrawn from the body to such an extent as to impoverish the organism and produce grave disturbances of nutrition. The various salts, with the exception of iron, are present in sufficient quantities and proper proportions in mother's milk. In most of the dilutions of cow's milk there is an excess of salts which may be neglected in feeding normal infants, but which plays an important rôle in the feeding of children already suffering from nutritional disturbances. The conditions under which the salt content of feedings should be altered and in just what degree each or all should be varied, are still unsolved problems.

Journal of Oklahoma State Medical Association, Muskogee

August

140 Extra-Uterine Pregnancy. W. C. Graves, McAlester.
141 Uterine Deviations. H. Reed, Oklahoma City.
142 The Puerperium. A. N. Lerskov, Claremore.
143 Prevention and Treatment of Superficial Infection. E. H. Troy, McAlester.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 29

1 *The Present Position of the Medical Profession. R. Saundby.
2 *Mistakes. B. Bramwell.
3 *Progress in Surgery. J. Lloyd.
4 *Simple Method of Treating Fracture of the Patella. J. T. Maclachlan.
5 Treatment of Fractures. A. V. Leche.
6 Erythema Nodosum. G. Pollock.
7 Salvarsan in Almond Oil. A. Loxton.

1. **Present Position of Medical Profession.**—Speaking of medical education, Saundby says, in his presidential address before the British Medical Association, that it should be possible to make the curriculum five years in a medical school after preliminary science has been passed, and so adequate time be obtained for those subjects which can be learned only in a medical school and in a hospital. Though there is still much in the modern arrangements for medical education which falls short of our desires, there has been a vast improvement in the organization of medical teaching, in the equipment of medical schools, and in their methods of instruction. Medical education in England has always had its feet firmly planted on the solid foundation of hospital work, but it was deficient in academic opportunities as compared with the schools of Scotland and the Continent. The hospitals have provided abundant clinical material, and many subordinate appointments of incalculable value for the training of practitioners, but the scientific needs of students are but poorly supplied in them. During the last ten years this has been to some extent remedied by the better equipment of the medical schools, mainly by the self-sacrifice of the senior teachers, who have surrendered the greater part of their scanty emoluments for this purpose; laboratories have been started in all schools, and in some hospitals it has been realized that it is not enough to possess good accommodation for the care and comfort of the sick, but that adequate means must also be provided for the study of their diseases by good laboratories with a sufficient paid staff. Saundby asks that hospital authorities take a broader view of their duties and realize that in the end the interest of the patients will be best served by spending more money on the scientific equipment of these institutions. The function of voluntary hospitals, medicine and the state and the national insurance bill are also considered in this paper.

2. **Mistakes.**—This is the address in medicine delivered at the recent annual meeting of the British Medical Association. Bramwell points out that there are mistakes of various kinds. There are the bad mistakes, which show incapacity to make the most ordinary observations, gross ignorance, or inexcusable carelessness; and there are the slight mistakes—they perhaps should hardly be called mistakes—such as erroneous conclusions with regard to the significance of certain facts or groups of facts. There are mistakes of omission and mistakes of commission, mistakes due to incomplete, inaccurate, or erroneous observation, mistakes due to hasty or illogical conclusions. There are mistakes which as regards their results are unimportant; and mistakes which, either to the practitioner who makes them, to the patient whose case is wrongly diagnosed, or to the public at large, are of great importance, since they may entail very disastrous consequences. Mistakes due to imperfect knowledge, to want of clinical experience, to erroneous observation, to inability to observe correctly, are most common in the early years of one's practice. In the case of experienced practitioners, hurry, and the incomplete examination of patients due to hurry, and hasty conclusions are probably by far the most common causes of errors in diagnosis. Physiognomonic diagnoses are apt to be erroneous. Mistakes are not infrequently due to the fact that the information secured from third parties is insufficient, inaccurate, or misleading. Before a disease is described as a distinct clinical and pathologic entity; typical and characteristic cases, which a few years later are easily diagnosed, are mistaken for other conditions. Mistakes due to erroneous deductions and illogical conclusions are very common. Even those men in whom the judicial faculties are most highly cultivated often fail to draw the same conclusions from the same facts.

Mistakes in diagnosis often occur because undue importance is given to some symptom or physical sign which is present. Mistakes are sometimes due to too little importance being attached to some fact or facts. Errors in diagnosis are often due to the fact that one's judgment is warped or biased from some cause or another. Most of us probably know how difficult it is to diagnose and treat illness in one's self or in members of one's own family. One's judgment is upset by anxiety and fear; all sorts of terrible possibilities occur to the mind and prevent one taking a cool and level-headed view of the case. On the other hand, one occasionally sees the exact reverse of this picture—a medical man the subject of advanced organic disease ignoring it or making light of it, and of the symptoms which it produces, in the most extraordinary way. One's judgment is apt to become biased in favor of some particular theory or idea, and under such circumstances, one sees everything in the light of that idea. Erroneous therapeutic conclusions, based on too limited a number of observations, are common.

3. **Progress in Surgery.**—Lloyd reviews the advances made in surgery, speaking more particularly of exploratory operations, kidney and stomach surgery, appendicitis, colostomy, cecostomy, prostatectomy and herniotomy. Speaking of gastric surgery he says that precision in the diagnosis of many stomach diseases can be secured only by exploratory incision, and that earlier resort to this procedure in many cases is very desirable. When pyloric obstruction is present, as evi-

denced by periodic vomiting, treatment by posterior gastrostomy is eminently and uniformly satisfactory. Pain in such patients may be absent altogether. When vomiting is absent or only occasional, and pain is the symptom for which a patient seeks relief, gastro-enterostomy has its failures. Acute ulcers of the stomach, except when perforating, do not demand surgical treatment; chronic ulcers, on the other hand, do; but what that treatment is to be he is uncertain. Some should be excised, some are cured by gastro-enterostomy, some should be infolded, and possibly some should be left alone by the surgeon. Operations for gastric carcinoma are at the present time unsatisfactory, probably owing to their non-early recognition. Dilated stomachs, in the absence of associated lesions such as pyloric narrowing or ulceration, may be left unoperated on. Gastric hemorrhages are not to be dealt with satisfactorily by surgical operation. They do better in the hands of the physician. Duodenal hemorrhages, too, are not readily amenable to surgical treatment. Gastro-enterostomy does not meet their urgent indications, although it may contribute to the healing of the ulcers in which the bleeding originates. Chronic duodenal ulcer is a pathologic fact; it is no mere surgical apparition as is sometimes suggested. Its frequency in adult males is remarkable; its diagnosis prior to exploration is highly probable, but by no means sure; its recognition at the time of operation is certain, and its relief by operation is most satisfactory. In Birmingham cancer of the stomach does not appear so often as a sequel of chronic ulceration as it is said to do in many other places. The majority of patients with cancer of the stomach give no account whatever of long-standing or of past indigestions. It appears usually as a primary indigestion in the middle-aged or elderly, and in all such patients Lloyd agrees that by the failure of medical treatment quickly to relieve such indigestion, a suspicion of cancer should be aroused and an exploratory operation at once performed.

As for herniotomy, he says that the most important step of the operation has to do with the sac of the hernia. The neck of the sac should not be ligatured, but the peritoneum beyond the neck, and when this has been done and cut across below the ligature, it matters little whether the sac is removed or not. The closure of rings and canals is said to be a matter of secondary importance; in Lloyd's opinion it should always be done, except in the inguinal hernias of very young children, and well done, too. Lloyd is performing regularly both suprapubic and perineal prostatectomy, and finds that each has its merits, and that neither can claim to be the better for all cases. The suprapubic operative mortality is rather the higher in his hands, probably because the more serious cases have been dealt with by this method. The after-results of both operations are then about the same. Prostatectomy for carcinoma and tubercle has been disappointing in his hands.

4. **Treatment of Fracture of Patella.**—The treatment employed by Maclachlan is as follows: First, a mold is made of the sound knee by taking poroplastic material, 1½ feet long by 6 inches broad, which is softened in boiling water, and then firmly placed on the sound knee. In this way a perfect mold of the knee-cap is taken; this is used as a splint for the fractured patella, the fragments being viced in the cap of the splint. A little cotton-wool is placed in the cap and sufficient to pad the rest of the splint, which extends above and below the knee-joint. Prior to fixing the splint the fragments are strapped into position by adhesive plaster, and longer strips are placed immediately above and below the patella, and drawn in contrary directions to pull the upper and lower fragments together. Lastly, a plaster-of-Paris bandage is put over all. In three weeks the plaster-of-Paris bandage is taken off. The splint is kept on for two weeks, passive exercises begun, and a knee-cap worn for two months, when it is discarded.

Lancet, London

July 29

8 *Present Position of the Medical Profession. R. Saundby.
9 *Mistakes. B. Bramwell.
10 *Address in Surgery. J. Lloyd.
11 Extraction of Cataract. H. L. Eason.
12 *The Appendix; Its Relation to Causation and Surgical Treatment of Affections of the Adnexa. H. M. Jones.
13 Rubella or Measles? D. W. C. Hood.
14 *Successful Case of Ovariotomy and Cesarean Section Performed on the Same Subject at One Sitting. H. B. Mylvaganam.
15 Fatal Case of Acute Mercurial Poisoning. A. W. Burton.

8, 9 and 10. See *British Medical Journal*, July 29, and abstracts 1, 2 and 3 in this issue.

12. **The Appendix.**—Jones advises that the appendix should be examined in every case of celiotomy for adnexal disease. This equally applies to the left adnexa as to the right. When the abdomen is opened for a grave appendix trouble, the adnexa should be examined. The appendix should be removed in every instance in which any abnormality or disease is found or if it be of unusual length, also if from the character of the operation there is a probability of further adhesions forming which may involve the appendix. The severity of the operation, however, will always have to be taken into account, and the influence its prolongation may have in lessening the chances of the patient's recovery.

14. **Ovariotomy and Cesarean Section.**—The operation in this case was performed for the ovarian disease which had become very troublesome. The duration of the pregnancy could not be determined because of the size of the ovarian tumor. The ovarian cyst was tapped and removed and then the section was done and a viable fetus about 8 months old was extracted. Both mother and child lived.

Journal of Tropical Medicine and Hygiene, London

July 15

16 Frequent Occurrence of Physaloptera Mordens as an Intestinal Parasite of Man in Tropical Africa. R. T. Leiper.
17 Seasonal Incidence of Dracontiasis on the Gold Coast. R. T. Leiper.

Quarterly Journal of Medicine, London

July

18 *Etiology of Auricular Fibrillation. C. E. Lea.
19 *Relationship of the Heart-Beat to Pulsus Alternans. J. D. Windle.
20 *Analysis of Gastric Contents. P. N. Panton and H. L. Tidy.
21 *Systolic Pressure at Different Points of the Circulation in the Child and the Adult. L. Findlay.
22 *Contribution to the Study of the Function of the A-V Bundle. P. F. Holst and G. H. Monrad-Krohn.
23 Essential Renal Hematuria. W. H. White.
24 Use of Tuberculin in So-Called Tuberculous Glands. G. E. Waugh.

18. **Etiology of Auricular Fibrillation.**—Rheumatic or choreic disease preceded auricular fibrillation in 56.6 per cent. of the cases examined by Lea. The most frequent lesion to which it gave rise being mitral stenosis (43.6 per cent. of cases with rheumatic history). Non-rheumatic cases presented auricular fibrillation in 43.4 per cent., the most frequent cardiac lesion being cardio- or arteriosclerosis, 57.1 per cent. The age incidence of mitral valve disease, with or without preceding rheumatism, was 38.2 years; the age incidence of cardiosclerosis was 53.9 years in rheumatic cases, 56.9 years in non-rheumatic. Females were more frequently subject to valvular disease than males in the proportion of 16 to 10; males were more subject to arterio- or cardiosclerosis, 15 to 8. Of all cases of auricular fibrillation, 32.8 per cent. occurred in cardiosclerosis, 31.3 per cent. in mitral stenosis, and 23.8 per cent. in cardiac dilatation. Influenza was noted as having occurred in 39.3 per cent. of non-rheumatic cases. Electrocardiographic records confirmed, in all cases examined, the polygraphic records.

19. **Heart-Beat and Pulsus Alternans.**—In all cases but one observed by Windle no alternation was present in records taken from the clinical apex beat, while in all disparity in force of alternate radial pulses was decided, and at times extreme. In the exceptional case the stronger beat of the heart-curve coincided with the weaker of the pulse. It is suggested that this anomaly is explicable on the assumption that the musculature of the ventricle producing the apex beat is not a part of that which drives the blood out of the left ventricle, otherwise it is inexplicable that the stronger beat of the ventricle should cause the weaker pulse, or that ventricular contractions equal in strength, beat by beat, should cause an alternating pulse. In two patients the heart's pulsation was recorded from two distinct areas: (a) In one case the cardiograms have the character of a left and right ventricular

impulse, respectively. The radial pulse was markedly alternating; but there was no evidence in the cardiograms of variations in strength of the ventricular contraction. (b) In the other case pulsation was recorded from the clinical apex-beat, and also from the fourth left intercostal space about 1½ inches from the left edge of the sternum. The cardiogram from both situations had the characters of left ventricular pulsation; that obtained from the fifth space at no time showed alternation in force. The cardiogram from the fourth intercostal space continuously alternated, except for brief periods.

The relationship between the alternating beats of the cardiogram and those of the radial pulse were not constant, the height of the respective waves being at times opposed, at others similar; at others, again, alternation was present in the heart-beat curve, whilst that of the radial pulse was equal, the reverse relationship occurred. Alternation was often pronounced in records of the jugular pulsation of this patient; invariably the larger wave corresponded to the higher wave of the radial pulse. In curves having character of right ventricular pulsation no evidence of alternation was present at any time. No variation in the intensity, pitch or duration of the heart-sounds or murmurs coincident with alternation of the pulse was detected in any case. While the observations lend some support to the view of Hering, that in alternate heart-beat a partial systole of the ventricle occurs, they also show that in alternating pulse it is not always possible, in clinical cases, to determine the fact of alternating heart action.

20. **Analysis of Gastric Contents.**—The investigations made by Panton and Tidy fall into two parts: the first deals with the routine examination of test-meals in a series of cases, the second consists of an inquiry into the various methods of examining test-meals and the meaning of the results obtained. In all 331 cases were examined: Carcinoma of stomach, 43 cases, operated 30. Gastric ulcer, 87 cases, operated 49. Duodenal ulcer, 36 cases, operated 21. Other gastric cases not operated, 62. Various conditions, 103 cases, operated 36. The results obtained follow: In normal gastric contents Günzberg's reaction is positive, free hydrochloric acid varies between 0.08 and 0.12, and the acidity lies between 40 and 50. In carcinoma of the stomach Günzberg's reaction is nearly always negative, i. e., free hydrochloric acid is absent. The average of the total acidity is 26. Some dimethyl acidity is often present. In the rare cases in which carcinoma is grafted on a simple ulcer, free hydrochloric acid is usually present, and the total acidity may be normal or even above normal. Thus, in these cases, the analysis often resembles that found in simple gastric ulcer. In simple gastric ulcer Günzberg's reaction is positive, the average of the free hydrochloric acid is 0.13 and the total acidity, 58. Free hydrochloric acid may be absent after a severe hemorrhage or after a previous gastrojejunostomy. In duodenal ulcer the average of the free hydrochloric acid is 0.17, and the total acidity, 69. Free hydrochloric acid is usually absent in cases of achylia gastrica, chronic alcoholic gastritis, severe anemia, chronic pulmonary tuberculosis, and in some forms of chronic dyspepsia. In these latter cases relief of gastric symptoms usually follows treatment by acids. Cases of hyperchlorhydria are commonly relieved by alkalies. It is not suggested by the authors that the diagnosis and treatment of gastric cases should depend on the result of test-meals alone, but they find that the simple analysis described affords very reliable information when taken in conjunction with clinical observation, and particularly with a carefully taken history.

21. **Systolic Pressure.**—The conclusions which Findlay draws from his study of well and sick children are, briefly: During childhood and youth the systolic arterial pressure is fairly uniform at different points of the circulation. In adult life the peripheral systolic pressure is lower than the central, and the difference between them increases with age. The difference greater than normal between the central and peripheral systolic pressures in cases of hypertension—from disease or experimentally induced—supports the idea that the behavior of the pressure and its variations depends on changes in the elasticity of the vessel wall.

22. **Function of A-V Bundle.**—The first case cited by the authors was one of Adams-Stokes syndrome with chronic bradycardia for many months, interrupted by short paroxysms of tachycardia. The post-mortem microscopic examination of the heart showed a destruction completely across the chief trunk of the a-v bundle. The heart was enlarged throughout (weight 590 gm.), the mitral valve calcified and the mitral ostium somewhat contracted. The calcareous infiltrations were continued into the septum membranaceum; on the right side this calcification could be seen as a projecting knot, the size of a pea and calcified right through, occupying the front part of the septum membranaceum. Also the aortic valves, especially the left were calcified so that the calcareous encrustations from the mitral valve and septum membranaceum were continued directly to the aortic valves. Both of the coronaries were calcified, but in no place obliterated or contracted. Microscopically, the muscles of the heart appeared normal, excepting certain small fibrous scars in the left ventricle. The macroscopic appearance of the calcareous knot and its situation alone made it highly probable that the main trunk of the a-v bundle must be damaged by the calcareous masses to a greater or lesser extent. The microscopic examination also showed that the main trunk of the a-v bundle had disappeared entirely, leaving not a trace of its normal tissue in the great calcareous knot. The authors assume that the relationship between auricle and ventricle along the a-v bundle must have been quite broken for a long time before death, and when also all the signs of a complete block have long been present, there occur attacks of great frequency of the pulse. The tracings from the last weeks of the patient's life show that the stimulus conduction from auricle to ventricle must have been to some extent restored, though the result of the post-mortem a little later makes it more than probable that the main trunk of the a-v bundle must have been, so to say, cut across by the large calcareous knot.

In the second case there was a normal a-v bundle, but strongly pronounced degenerative neuritis in both vagus nerves. At the post-mortem examination the heart was found to be hypertrophied, dilated and to some degree infiltrated with fat; it weighed 510 gm. The subpericardial fat was highly developed, especially over the right half of the heart, where the muscles were also somewhat infiltrated with fat without showing any signs of fatty degeneration. Incipient arteriosclerotic changes in the aorta were present. The coronary arteries were normal. An embolus was found in the right pulmonary artery, with an incipient hemorrhagic infarct in the lung. The other organs were found in all essentials normal. The microscopic examination of the a-v bundle showed that it was mixed with fatty tissue with large fat cells, perhaps to a little higher degree than is found on an average; but not outside the normal limits. The fatty tissue was found especially in the main trunk and also in the left branch. The a-v bundle was also somewhat hyperemic (a post-mortem phenomenon), but not especially strongly marked. On the whole, the a-v bundle presented no clear pathologic alterations. In both vagus nerves there were found very important anatomic changes. In unstained preparations from the upper part of the nerves black drops of fat could be seen around the nerve. In sections in which the nerve was longitudinally cut, the fibers were to a large extent brownish-black to black in color. Such black fibers were found partly through long stretches of the nerve, and they were on the whole rather homogeneous, although in places it gave the impression of a kind of accumulation of small granules of different sizes. In places where the section had been made across the nerve, there were, in addition to swollen black nerve fibers, a similar number of more yellowish normal fibers. The middle portion of the neck vagus showed on the whole the same aspect as described above, but the black parts of the nerve fibers were seen to be more extensive, so that the majority of the nerve fibers are black; the black round or cylindric formations were seen on closer inspection to be formed by numerous small granules or fragments. In sections from the lower portion of the nerve (about where the cardiac branches come off), extensive black cylindrical formations were seen, consisting of extremely fine, small, black granules,

lying spread in the larger bundles. Examination of the right vagus showed the same appearance as that described for the left. In hematoxylin stained sections no signs of inflammation were to be seen. The right and left middle cervical sympathetic ganglion and the cardiac sympathetic ganglion, prepared in exactly the same manner as the vagus, showed nothing abnormal.

The medulla oblongata showed in the upper half of the fourth ventricle and in the lower half no degenerated nerve fibers. The ganglion cells at the bottom of the fourth ventricle, amongst which are the vagus nuclei, showed an extremely finely granulated grey-black coloration (lipochromate), but no signs of degeneration. The hypophysis showed its normal structure without any sign of inflammation or degeneration. The chief interest in this case lies in the fact that in all probability it must be regarded as a case of Adams-Stokes disease of vagal origin. The authors hold that the muscular (extra-fascicular) type of the disease of Adams-Stokes that is especially described by Pletnew and Nayago, has still to be proved in man.

Clinical Journal, London

July 26

25 Sore Throat. H. Tilley.

Medical Press and Circular, London

July 26

26 Dysphagia. A. Wylie.
27 Two Cases of Metastatic Ocular Inflammation Associated with Bacillus Coli Toxemia. A. Lawson.
28 The Training of the Indian Child in Health Matters as Part of General Education. D. Walsh.
29 Case of Acute Pancreatitis, with Surgical Conditions of the Pancreas. J. J. Clarke.

Archives Générales de Chirurgie, Paris

May, V, No. 5, pp. 481-598

30 Spontaneous Rupture of Hydroceles. L. Thévénot.
31 Experimental Research on Aseptic Ligation of Arteries. L. Delrez.
32 True and False Chorio-Epitheliomas. D. Angier and J. Poulain.
33 Four Cases of Excessive Bending or Straightening of the Neck of the Femur from Infantile Paralysis. P. Mauclaire.

Presse Médicale, Paris

July 5, XIX, No. 53, pp. 561-568

34 *Traumatic Spondylitis. (Maladie de Kümmel-Verneuil.) L. Imbert and F. Vial.

July 8, No. 54, pp. 569-576

35 *Digitalis and Bundle of His. A. Martinet.
36 *Treatment of Tuberculosis of the Kidney. L. Bernard.

July 15, XIX, No. 56, pp. 585-592

37 *Vaccine Therapy. (Vaccinothérapie par les vaccins irradiés.) M. Renaud.

34. Traumatic Spondylitis.—Imbert and Vial warn against the deceptive subsidence of symptoms after an accident involving the spine. After the first period of local pain and soreness, with possibly some paralysis of the sphincters and slight exaggeration of the leg reflexes, all the symptoms may subside and the patient may be apparently quite well for several weeks or months. But then the site of the contusion gradually grows painful again and girdle pains develop with incontinence or retention of urine, constipation or diarrhea, etc., and the patient stoops forward, the curvature of the spine being generally of the scoliotic type. Treatment should be along the same lines as for Pott's disease, striving to immobilize and relieve the spine of all weight-bearing. Reclining in the dorsal decubitus with a cushion under the lumbar region is indicated during the first stage, and also if the patient is seen at the onset of the third phase; the condition should be supervised with the Roentgen rays during the quiescent period if possible. The final outcome is generally ankylosis, and there may be industrial incapacity equivalent to 25 or 50 per cent. of the original wage. The characteristic feature of this form of injury of the spine, known as Kümmel-Verneuil's disease, is the period of latency preceding the development of the curvature.

35. Digitalis and Heart-Block.—Martinet presents arguments to sustain his assertion that digitalis is contra-indicated in case of partial heart-block while it may be indicated in total heart-block. In case of mitral stenosis, digitalis is contra-indicated if the presystolic souffle is missing, the jugular or liver-pulse is synchronous with the cardiac systole, and the heart occasionally skips a beat, with a curve showing disturbance in conductibility.

36. Treatment of Tuberculosis of the Kidney.—Bernard discusses whether the progress realized in tuberculin treatment and other medical measures in the last fifteen years justifies reliance on medical measures alone in renal tuberculosis. His conclusions are that nephrectomy is still the one great reliance and medical measures come into their own only when operative measures are impracticable for any reason.

37. Vaccine Therapy.—Renaud prepares his vaccine from selected cultures of the bacillus of typhoid fever by emulsionizing a forty-eight-hour growth on gelose with physiologic salt solution in the proportion of 5 mg. of culture to the cubic centimeter. This emulsion is submitted to the action of the ultraviolet rays for thirty minutes, by which the bacteria are killed. He finds that animals, guinea-pigs or rabbits are immunized by moderate or large non-lethal doses more readily than by small doses. The inoculation entails no risk of infection and the result is the rapid establishment of an immunity with the appearance of antibodies in the serum. The author has used his vaccine in forty clinical cases, which he will report later.

Semaine Médicale, Paris

July 12, XXXI, No. 28, pp. 325-336

38 *Sodium Chlorid as Factor in Edema Induced by Large Doses of Sodium Bicarbonate. F. Widal, A. Lemierre and Cotoni.

July 26, XXXI, No. 30, pp. 349-360

39 *Cleaning and Scraping the Uterus After Septic Abortion. R. De Bovis.

38. Edema Following Large Doses of Sodium Bicarbonate.—Widal, Lemierre and Cotoni describe some clinical experiences and experiments on normal persons which demonstrate that ingestion of sodium bicarbonate in large amounts checks the elimination of sodium chlorid. As the sodium chlorid is thus retained, water is retained with it. This explains the tendency to dropsy observed after large doses of sodium bicarbonate have been taken in the course of diabetes. It is not the bicarbonate that causes the dropsy; the retained chlorid is responsible for it. Under the bicarbonate treatment the output of sodium chlorid in the urine rapidly declines, showing how it is being retained in the body and edema develops in consequence, but as soon as the bicarbonate is suspended, and the elimination of sodium chlorid proceeds as usual, then the dropsy rapidly drains away. The proportion of water in the organism at any given time is thus dependent not only on the amount of sodium chlorid being ingested and on the more or less perfect functioning of the apparatus engaged in the elimination of the chlorids, but it depends also on the ingestion of sodium bicarbonate. Probably the bicarbonate is not the only substance which possesses this property. The chlorid is retained or poured out in a flood at will, just by giving or withholding the bicarbonate. Although it upsets the metabolism to such an extent yet it does not seem to cause any material lesion or permanent modification of the nutrition. As soon as it is suspended the chlorid metabolism proceeds to right itself promptly and effectually. The data reviewed emphasize anew the importance of sodium chlorid in the production of edemas and the connivance of the two substances in producing certain effects.

39. Cleaning and Scraping the Uterus After Abortion.—De Bovis discusses the recent contention of Winter that curettage of the uterus after abortion should be reserved for cases in which such complications as hemorrhage render it necessary, but that the physician in ordinary cases should wait until the infection has subsided before he attempts to interfere to clean out the uterus. De Bovis concludes that while there are good arguments on Winter's side the contention should not be pushed too far. The rule should be retained during the primary discussion, to prefer cleansing to curettage and to be chary of intervention, leaving the milder infections alone, in spite of the fact that they sometimes develop an unexpected malignancy. The accumulation of more facts, he hopes, will clear the matter up; if Winter is right, one cannot but admire the boldness which led him to attack so well established a therapeutic dogma.

Archiv für klinische Chirurgie, Berlin

XCV, No. 2, pp. 245-493. Last indexed August 12, p. 594

40 *Trauma a Factor in Pathogenesis of Kidney Tuberculosis. (Trauma und Nierentuberculose. Trauma und Organtuberculose.) F. Pels-Leusden.
41 *Diagnosis of Chronic Duodenal Ulcer. A. Neudörfer.
42 *Operative Treatment of Inflammatory and Functional Disturbances of the Large Intestine. F. de Quervain.
43 *Patching and Bridging in Plastic Surgery. (Neue Wege der plastischen Chirurgie.) F. König. (Experimente über Verschluss von Wunden und Ueberbrückung von Defecten schleimhauttragender Körpercanäle und- höhlen durch freie Autoplastik.) F. Hohmeier.
44 *Changes in Fundus of Eye in Cases of Rupture of Liver. (Veränderungen am Augenhintergrund bei Fällen von Leberruptur.) A. Tietze.
45 *Diagnosis of Injury of Liver. (Zur Diagnose der Leberverletzungen.) H. Finsterer.
46 *Treatment of Varices by Anastomosis between the Saphena and Femoral Veins. E. Hesse and W. Schaack.
47 Intestinal Gas Cysts. (Ueber Pneumatosis cystoides intestinorum insbesonder deren Aetiologie.) H. Miyake.
48 Intestinal Sarcoma. (Zur Kenntnis der Ileocecalsarkome.) S. Goto.
49 General Principles for Treatment of Wounds. W. Noetzel.

40. **Experimental Research on Tuberculosis of the Kidney.**—Pels-Leusden has been experimenting for years to study the mechanism of the development of tuberculosis in one kidney, and here gives the detailed reports of his experiments. He used goats, sheep and dogs and injected the bacilli directly into the artery supplying the organ, without obstructing the flow of blood. Success is possible only when small amounts of very virulent bacilli are used for the purpose. Direct trauma as by a contusion is not necessary for development of the renal tuberculosis, but such a trauma may mobilize bacilli and entail a tuberculous process at some remote point.

41. **Chronic Duodenal Ulcer.**—Neudörfer reports eight case-histories, all of which sustain his assumption that if a duodenal ulcer does not heal completely under a single systematic course of dieting as for gastric ulcer, an operation is not only justified but imperative. According to the records, operative treatment cured the tendency to duodenal ulcer in from 80 to 90 per cent. of all the cases. The best results seem to be attained with simple gastro-enterostomy, generally supplemented by closing up the pylorus. One of his patients had an ulcer in the stomach with one in the duodenum, and she still has the same symptoms. This may be due to the fact that he did not close up the pylorus in this case or he may have overlooked another ulcer.

42. **Operative Treatment of Disturbances in the Large Intestine.**—Quervain reports the outcome of an operation eight years ago on a woman with abnormally sagging long transverse colon with mucomembranous inflammation and gallstones. He removed the cecum and ascending colon which put an end to all the symptoms on the part of the intestine. He reviews similar cases on record, the results showing that the colon cannot be resected with a prospect of normal stools; diarrhea or constipation seems to be the rule afterward or they may alternate. His final conclusion is that ileosigmoidostomy is not so good an operation as what he calls ileotransversostomy and in future he will give the preference to the latter.

43. **Plastic Surgery.**—König has been experimenting with a patch applied outside after suture of a defect in a mucosa-lined cavity. The flap of tissue applied grows into place so solidly that he calls the method "soldering" (Verlöthung). The first time he applied this method was in the reinforcing of a suture after an operation for abdominal hernia; the tissues were so thin and fragile that even the stitch-holes seemed to invite recurrence. He reinforced the suture with a thin flap of periosteum and bone from the tibia, but since then has used the periosteum alone and has now a record of fourteen abdominal and scar hernias which he has safely patched and soldered up in this way. He experimented on dogs to apply this patch method when there were defects in hollow organs and also as a tubular bridge when there was an actual gap in a tubular organ. He gives illustrations of his various experiments and operations in which he thus patched and soldered the bladder and urethra or the rectum. The method is especially adapted for defects after resection of cancers in the rectum. He has found fascia tissue the best for the purpose, obtaining it through a separate incision, not far from the point where it is to be used. The main point is to have the flap in smooth contact all over its surface, so he always sutures the soft parts together above it to press it down into its bed. No tampon should be used. He adds that it is simply amazing to see how the free transplanted flap heals into its new place. Hohmeier reports operations on the same principle on the esophagus, bladder and trachea of dogs, all with promising outcome.

44. **Changes in the Fundus of the Eye with Rupture of the Liver.**—Tietze has operated in eight cases of rupture of the liver in the last five years. In two of the cases the fundus of the eye showed the same changes to which we are accustomed with albuminuric retinitis. These patients were men of 18 and 30 with severe contusion of the liver region and rupture of the liver requiring suture. In one case the changes in the fundus had subsided by the end of the second day. He queries whether the changes were due to compression or to the anemia.

45. **Diagnosis of Injury of the Liver.**—Finsterer noticed bradycardia as a striking symptom in two cases of injury of the liver; it seemed directly contrary to what would have been anticipated with the acute anemia. In one case the liver had been ruptured by the kick of a horse and the pulse was only 48. In the other case the liver had been sutured and the pulse was 52. Several writers have mentioned bradycardia with injury of the liver, and ascribe diagnostic importance to it. Finsterer experimented on animals to determine the influence on the pulse of injury of liver and spleen. The results with twenty animals showed that bradycardia is a characteristic symptom of injury of the liver, but that its absence does not exclude injury of this organ. The local pains with injury of the liver may relate to the right shoulder, and the reflex rigidity may extend over the entire abdomen. In two other cases of contusion of the liver region with bradycardia no operation was deemed necessary, but the assumption of injury of the liver was sustained by the development of jaundice and the appearance of bile salts in the urine. In itself, therefore, bradycardia does not necessarily indicate operative treatment. It is important also in prognosis, he thinks; if there is no bradycardia in spite of absorption of bile salts or if, with extreme anemia, the pulse is 70 or 80, the injury requires an operation at once, the prognosis being graver than when the pulse is abnormally slow.

46. **Venous Anastomosis in Treatment of Varices.**—Hesse and Schaack describe experiments on the cadaver and on animals which show the feasibility of implanting the saphenous vein in the femoral vein, 10 cm. below its normal site, in the treatment of varices. The arrangement of the valves and the anatomic and physiologic conditions tend to restore normal conditions in the venous circulation. Delbet published in 1906 eight cases and has reported sixteen since in which he has applied this method, but since then it does not seem to have been applied, possibly owing to the little notice paid Delbet's communication and to the tedious technic. Hesse and Schaack here report the successful application of the method in twenty-six cases. They give the details of the first twenty-three cases and commend the operations as restoring physiologic conditions. If the fine results attained to date prove permanent the method has a future. In their cases all the varicose ulcers had healed, all the edema had subsided and the patients were free from all subjective disturbances. Only one case was a failure. The wound healed but by the end of a week deep infection was evident and the patient succumbed the twenty-sixth day to suppurative thrombophlebitis of the two veins, with superposed pneumonia.

Berliner klinische Wochenschrift

July 17, XLVIII, No. 29, pp. 1313-1360

50 Alleged Combustible Carbohydrate for Diabetics. (Beitrag zur Chemotherapie der Zuckerkrankheit.) G. Rosenfeld.
51 *Operative Treatment for Pendulous Abdomen. (Die Operation des Fett-Bauches.) R. Jolly.
52 *Differential Diagnosis of Benign and Malignant Hour-Glass Stomach. J. Kretschmer.
53 The Duodenal Tube. M. Gross.
54 *Influence of Calcium Salts on Production of Effusions. R. Levy.
55 Position as Aid in Diagnosing Tricuspid Defect. H. Stern.
56 Continuous Suction in Treatment of Nasal Disease. A. Peyser.
57 *Anatomic and Clinical Bases for Operative Treatment of Pulmonary Embolism. H. Rittmann.
58 Endo-Urethral Massage. J. Seilei.

July 24, No. 30, pp. 1361-1408

59 Rhinoplasty. (Plastischer Ersatz des Nasenseptums.) O. Hildebrand.
60 Tissue Culture in Vitro. (Kultur der Gewebe ausserhalb des Organismus.) A. Carrel.
61 Elimination of Salvarsan. H. Frankel-Helden and E. Navassart.
62 *Consanguineous Ectodermal Anomalies in Development. (Untersuchungen an drei blutsverwandten Personen mit extodermalen Hemmungsbildungen, besonders des Hautdrüsensystems.) W. Wechselmann and A. Loewy.
63 Pulmonary Tuberculosis. E. Aufrecht.
64 Pathognomonic Blood Findings in Pernicious Anemia. (Definition, hämatologisches Blutbild und pathognostisch-differentialdiagnostische Blutkriterien der perniciösen Anämie.) A. Pappenheim.
65 Urogenital Involvement in Scleroderma. (Beteiligung des Urogenitalapparates bei einem Fall von Sklerodermie.) G. Ehrenberg.
66 Tracheopathia Osteoplastica. I. Haga.

51. **Correction of Pendulous Abdomen.**—Jolly reports two cases in which he has relieved patients from pendulous belly by resecting the pendant portion. A curving incison was made near the umbilicus from groin to groin and then another, with a sharper curve, is made below, both incisions starting at the same point on each side and the two outlining a crescent. The pendant mass of abdominal skin and fat thus circumscribed is cut out and the upper and lower incisions are sutured together. He gives an illustrated report of his first case; the lips of the wound left by resection of all the tissues down to the fascia were held together with forty Michel clips. One of his patients had long had painful disturbances from the pendulous belly as she strove to keep it under control with corsets. Jolly has been able to find in the literature only two communications on operative correction of pendulous belly, one from Demars, a French surgeon, and one from Schulz, a Russian, who reports three cases. The linear scar left from the transverse crescent incisions is scarcely perceptible; there is little, if any, bleeding at the operation, and Jolly regards it as simple and entirely harmless, possibly more so than strenuous measures sometimes undertaken by women to reduce their flesh to get rid of their sagging belly and which rarely accomplish their purpose, while this is promptly realized by the simple operation described with illustrations.

52. **Differentiation of Benign and Malignant Hour-Glass Stomach.**—Kretschmer gives some illustrations of the findings with radiography of hour-glass stomachs which demonstrate, he thinks, that it is safe to assume malignant disease when the hour-glass constriction is horizontal and vertical, the radiograph showing an extensive horizontal and vertical defect in the outline of the stomach. With non-malignant anomaly the constriction is more or less horizontal. With the non-malignant hour-glass stomach the upper sac empties itself into the lower, while with malignant disease both halves of the stomach seem to empty themselves regularly together, without the lower sac filling up first.

54. **Influence of Calcium Salts on Production of Effusions.**—Levy's experimental research failed to demonstrate that calcium chlorid has any inhibiting action on the production of effusions.

57. **Operative Treatment of Pulmonary Embolism.**—Ritzmann has found by numerous experiments on the cadaver that Trendelenburg's operation to expose the pulmonary artery to remove an embolus is entirely practicable from the anatomic standpoint although none of the five patients thus operated on was permanently cured. Ritzmann has been studying the fifty-five cases of an embolus in the pulmonary artery which he has encountered during the last 6,000 necropsies. The embolism followed operations on the trunk or legs in six of the thirty-five cases of which the details are known; it followed injuries of the legs in three others, varicose disturbances in the legs in seven, anemia and cachexia in eight, and it occurred with a heart defect in three. In only six cases was the diagnosis of pulmonary embolism made during life, and in these cases the embolism proved rapidly fatal. In all the others there was an interval of from half an hour to forty-eight hours between the onset of the symptoms of embolism and the fatal termination. An interval of from three to six hours was the rule, and it is probable that the embolus gradually increased in size or that the embolism occurred in waves. This is evidenced by the transient improvement under camphor, and the discovery in the smaller arteries at necropsy of minute emboli evidently older than the big one that proved fatal. The data show thus, he remarks, that the diagnosed embolism proved too rapidly fatal for any operative intervention, and that in the cases with a sufficiently long interval for operative interference to have been successful, the nature of the disturbances had not been recognized. The embolus was generally located in the main trunk of the artery or one of its chief branches, and from the pathologic-anatomic standpoint might easily have been removed. The great difficulty therefore in the way of successful operative treatment of pulmonary embolism is the failure to recognize it in time. Bloody sputum at the beginning of the disturbances is an almost constant symptom. The mechanical factor should be considered in diagnosis as the embolism occurred almost invariably after sitting up in bed, getting up, changing the dressings, or after the agitation stage of general anesthesia. An instance has been reported recently in which the embolism followed application of a constricting band to induce hyperemia. The condition of the heart and lungs when the embolism occurs is a decisive factor in the outcome, as also conditions favoring thrombosis. On suspicion of pulmonary embolism a surgeon who has mastered Trendelenburg's technic need not hesitate to apply it to save an otherwise doomed patient.

62. **Consanguineous Anomalies of Development.**—The authors report a peculiar anomaly of development of the ectoderm which was transmitted only to the male offspring through the female; none of the developmental errors were at any time noticed in the females, nor were all the males affected. The original progenitor of the patients whose cases are reported was twice married. By her first husband she had four children, only one of whom was affected by the anomaly to be described. One of the well children gave birth to fifteen boys, four of whom showed the anomaly. By her second husband the original progenitor gave birth to eleven children, two of the boys showing the anomaly. One of the well children gave birth to one child, a boy, who also showed the anomaly. The congenital maldevelopment consists in a hypotrichosis, a saddle nose, misshapen ears, absence of teeth, in part or entire, with misformation. The fingernails were normal. The growth of hair on the head, face and body was exceedingly sparse. The eyebrows were absent, while the eyelashes were well developed. The beard was very sparse and only a few hairs were present on the chest and in the axillæ. The skin was normal in color but appeared to be rather loose and was very dry. The genitalia were well developed. The ears were of the type known as satyr ear. There were no evidences of syphilis; the Wassermann reaction was negative. When teeth were present they were flask-shaped. The jaws were atrophic and did not contain teeth germs. Although the patients could not be called imbeciles their mental development was noticeably deficient. None of them perspired.

Centralblatt für die Grenzgebiete der Medizin und Chirurgie, Jena

June 24, XIV, No. 9, pp. 321-368

67 *Tuberculosis of the Kidney. (Ueber Nierentuberkulose.) K. Frank.
68 Nodular Rheumatism. O. Willner.

67. **Tuberculosis of the Kidney.**—Frank reviews, with comment, 527 articles bearing on renal tuberculosis. The mortality in 1,331 nephrectomies for tuberculosis has been 9.3 per cent. in the years since 1900 in the experience of thirty-five surgeons, including Kelly's thirty-five cases (1904), with 14.2 per cent. mortality, Rovsing's 106 with 5.7 per cent. mortality (1909), and Albarran's 188 cases with 3.3 per cent. mortality (1908). The mortality has grown constantly less with the progress in diagnosis and technic; Pousson, for instance, reported in 1902 a mortality of 33.7 per cent. in 335 operations, while it was only 11.6 per cent. in the forty-three operations reported in 1908. In the first half of the last decade the mortality in 137 operations was 18.2 per cent., while it was only 8.2 per cent. in the 1,194 operations 1905-1910. The ultimate outcome of many of the cases is also recorded. The results seem to show that there is little danger of ascending non-tuberculous pyelonephritis from the bladder after removal of one kidney. It occurred only once in Israel's experience. Heal-

ing of the bladder lesions had better be promoted by local measures after the nephrectomy. Rovsing reported spontaneous cure of the tuberculous lesion in the bladder in fourteen cases; in twenty-five others there was propagation of minute foci or the lesions persisted unmodified. He advises after waiting a little to inject, after the bladder has been well rinsed out, 50 c.c. of a fresh and warm 6 per cent. solution of phenol, allowing it to be retained for two or three minutes in the bladder and then evacuated, repeating this until the solution comes away rather clear. He repeats this at longer and longer intervals; the course requires six or eight weeks. The measure is painful and may require injection into the bladder of some sedative. An opium or morphin suppository is given afterward. Occasionally signs of phenol poisoning were observed, black urine, nausea and vomiting, but all transient and never serious. The treatment proved successful in a number of apparently hopeless cases, and Lichtenstern, Bonamone and Lower have also reported good results with it, but Rafin and Stossmann advise against local measures as useless and liable to do harm. Hunner found it necessary to make an opening from the bladder into the vagina to relieve the disturbances after nephrectomy in one case; sitz baths were often found useful also.

Deutsche medizinische Wochenschrift, Berlin

July 20, XXXVII, No. 29, pp. 1337-1376

69 Salvarsan. E. Hoffmann and J. Jaffé.
70 *Arsenic and Iron in Chlorosis. F. Seiler.
71 Roentgenotherapy of Myoma of Uterus. E. Schmidt.
72 Roentgen Irradiation of Thyroid in Thyroidism. A. Simon.
73 *Phenolphthalein Test for Occult Blood in Feces. R. Goldschmidt.
74 *Tendon Stretching for Paralytic Deformities. (Sehnenentspannung bei Lähmungsdeformitäten.) W. Böcker.
75 Veratrum Viride in Eclampsia Gravidarum. E. G. Zinke.
76 Recent Methods of Diagnosticating Malignant Growths. H. Hirschfeld.

70. **Effect of Arsenic in Chlorosis.**—The effect of iron and arsenic and of both combined in chlorosis was studied by Seiler in thirty-three cases. In thirteen cases arsenic alone, in twelve cases iron only, and in eight cases iron and arsenic in combination were given. The arsenic was given in the form of arsenious acid, 0.005 to 0.01 gm. in pill form, or injected subcutaneously. The results were *nil*. While the hemoglobin percentage was a little higher in some cases after two or three weeks' treatment, the number of red cells was on the average reduced. Therefore it is concluded by the author that chlorosis should not be treated with arsenic alone. The patients who received the iron treatment were given a modified Blaud's pill for four weeks. The results on the whole were rather satisfactory. The hemoglobin percentage was markedly increased, almost doubled, whereas the number of erythrocytes was increased to normal. When both iron and arsenic were administered the result was a most astonishing one. For instance, if at the beginning of the treatment the hemoglobin was 37 per cent. and the erythrocytes, 3,000,000, at the termination of the treatment the findings were hemoglobin, 96 per cent.; erythrocytes, 5,000,000. It is quite evident, therefore, that the proper treatment of chlorosis is to use a combination of iron and arsenic.

73. **Phenolphthalein Test for Occult Blood in Feces.**—Goldschmidt confirms Boas' findings with reference to the value of the phenolphthalein test for detecting occult blood in the feces. He believes that this is the best test for the general practitioner because it is performed easily and quickly and with almost no apparatus.

74. **Surgery of Paralytic Deformities.**—Böcker advocates the transplantation of tendons for the correction of all paralytic deformites of the feet. However, this should not be undertaken until thorough stretching of the tendons has, beyond question, failed to produce any result. If electricity fails to produce any reaction in the muscles involved a central paralysis is, of course, present and then, depending on the condition of the muscle fibers, a corrective operation should be undertaken. The author reports several illustrative cases. In one of these there was complete paralysis of the peronei, tibialis anticus and extensor digitorum communis. He transplanted the flexor hallucis longus to the peronei and the extensor hallucis longus navicular bone. The tibialis anticus was transplanted to the cuboid bone. The result was satisfactory.

Münchener medizinische Wochenschrift

July 18, LVIII, No. 29, pp. 1545-1600

77 Trauma and Meningitis. H. Merkel.
78 *Esophagoplasty. E. Lexer.
79 Securing Pure Cultures of Spirochæta Pallida and Spirochæta Pertenuis. H. Noguchi.
80 Dilatation of Cervix for Operative Purposes and to Produce Abortion. (Erweiterung des Gebärmutterhalses zu gynäkologischen Zwecken und zur Einleitung des künstlichen Aborts.) K. Hegar.
81 Pituitrin as a Styptic in Gynecology. (Pituitrin als gynäkologisches Styptikum.) H. Bab.
82 *Local Anesthesia of Brachial Plexus. (Anästhesierung des Plexus brachialis bei Operationen an der oberen Extremität.) G. Hirschel.
83 Accidents and Complications in Orthopedic Surgery. (Unfälle und Komplikationen bei orthopädischen Operationen.) I. Wierzejewski.
84 Syphilitic Spastic Paralysis After Salvarsan. (Spastische Spinalerkrankung bei Lues nach Salvarsan.) M. Juliusberg and G. Oppenheim.
85 *Rheumatoid Arthritis Due to Measles in an Infant. (Masernrheumatoid im Säuglingsalter.) M. Feibelmann.
86 Eye Affections in Acne Rosacea. R. Hilbert.
87 *Acoustics of Heart Tones. (Cardiophone.) S. Lilienstein.
88 *Inversion of Appendix Vermiformis. O. Langemak.
89 *Relationship Between Hyperpigmentation of Skin in Addison's Disease and the Adrenal Function. (Hyperpigmentierung der Haut bei Morbus Addisonii und der Funktion der Nebennieren.) G. Stümpke.
90 Test for Salvarsan in Urine. J. Abelin.
91 Errors in Serodiagnosis of Echinococcemia. (Fehlerquelle bei der Serodiagnose der Echinokokkusinfektion.) A. Brauer and A. Israel.

78. **Esophagoplasty.**—The unsuccessful outcome of a case of esophageal carcinoma in which the patient was operated on according to the method of Roux, led Lexer to modify the procedure by substituting for the piece of intestine a skin flap. Two patients operated on according to this method in 1903 and 1904 got along very nicely, the wounds healed kindly without fistula formation and function was perfect. Only the neck portion of the esophagus is formed of skin; for the remaining portion the intestine is used according to the Roux method. In November, 1907, Lexer extended this procedure so that the entire esophagus was rebuilt from skin. The incision was begun 2 fingerbreadths above the sternal notch extending 6 centimeters to the left of the median line. It was then continued downward 3 fingerbreadths below the margin of the ribs, then extending inward to the median line. This huge skin flap was then separated from the underlying tissues and rolled up to the right so as to form a tube with a lumen large enough to admit the entire finger, the epidermis being on the inside. The skin of the chest was then loosened by undermining so that it could be drawn together covering the defect made by the flap and thus burying the skin tube completely. About a month afterward the lower mouth of this tube was anastomosed with the stomach and when healing had occurred there was a continuous patulous duct from the neck to the stomach. Lexer had contemplated making an anastomosis between the pharynx and esophagus but the patient succumbed to gangrene of the lungs incident to a recurrence of the carcinoma about two months after the original operation. Lexer concludes from this operation that the principle of the operation is correct. In another case he adopted the combined procedure using a loop of jejunum to replace the esophagus as high as the mammæ and above that making a skin tube. The result was a most gratifying one. The patient is able to swallow food although fluids must be taken at the same time in order to wash down large boluses of food. At first the patient complained of considerable itching in the skin portion of the esophagus but this soon subsided. Eight months have elapsed since the final operation and the patient is enjoying the best of health.

82. **Anesthesia of Brachial Plexus.**—Hirschel reports two cases in which he operated successfully on the elbow and ulna for the removal of fractured bones, and in a third case for tuberculous osteomyelitis, all under local anesthesia of the brachial plexus. The anesthetic was injected directly into the plexus.

85. **Arthritis Caused by Measles.**—A 6-months-old infant developed a typical attack of measles which ran the regular course and terminated in complete recovery. About five days afterward when no further effects of the measles were apparent, there developed a swelling and redness of the right large toe and dorsum of the foot. A similar condition developed

in the left foot and the right wrist and right elbow. All of the joints so involved were intensely painful, subjectively as well as objectively. The right hip and right knee next became slightly painful. The heart, lungs and other organs were apparently normal. There was very little elevation of temperature and inside of twenty-four hours the pains began to subside and the swelling became less. There was a slight leukocytosis and little poikylocytosis. When the patient was seen again, a week later, recovery was complete. Feibelmann believes that this was a typical rheumatoid condition caused by the measles. The case is interesting not only because of the arthritis following measles, but also because of the age of the patient.

87. **Acoustics of Heart Tones.**—Lillienstein calls attention to the fact that it is of the greatest importance to be able to differentiate valvular and pericardial adventitious sounds. This is hardly possible by means of the instruments and apparatus hitherto in use. Lillienstein has devised what he calls a cardiophone or a microphone stethoscope which makes accurate diagnosis possible. The heart tones are very easily appreciated by means of this instrument and any deficiency from the normal is quickly detected. Valvular tones may be differentiated from pericardial friction or other sounds, and the various sounds heard during respiration, both in well and diseased lungs, are easily heard. The instrument is easily portable. The illustration shows the method of construction of the apparatus.

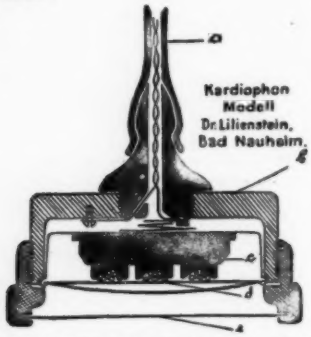


Figure showing Lillienstein's cardiophone; a, electric wiring; b, enclosed capsule; c, carbon; d, carbon membrane; e, hard rubber or celluloid membrane.

88. **Inversion of the Appendix Vermiformis.**—Langemak reports the case of a boy 4 years old who complained of pain in his right hip. Temperature was normal; there was no vomiting; no abdominal tenderness; no pain on pressure. Under the right Poupart's ligament an intra-abdominal mass was palpable, slightly tender on pressure and almost fixed. There was slight abdominal rigidity. Below Poupart's ligament was a fluctuating mass which was assumed to be an abscessed gland. In the meantime the temperature rose to 40.7 C.; pulse, 144. A diagnosis of epityphlitis was made. At the operation it was found that the appendix had become entirely inverted into the cecum. By means of gentle massage it was possible to reduce the invagination. Only fifteen similar cases have been reported in the literature.

89. **Skin Pigmentation in Addison's Disease.**—It is believed by Stümpke that the excessive pigmentation of the skin in Addison's disease is not the result of excessive pigment formation in the adrenals but that this occurs in the skin itself as the result of the action of the secretion of the adrenals which reaches the skin through the circulation.

Medizinische Klinik, Berlin

July 16, VII, No. 29, pp. 1109-1146

92 Surgery of the Teeth. (Die Zahnchirurgie und ihre Bedeutung für den praktischen Arzt.) A. N. Kneucker.
93 Statistics in Regard to Blindness from Ophthalmia Neonatorum in Germany. (Die Erblindungsgefahr infolge von Augenentzundung der Neugeborenen.) F. Best.
94 Arthrectomy for Gout. (Operative Heilung des Podagra.) F. Franke.
95 Sugar in the Diet in Heart Disease. (Zuckernahrung bei Herzkrankheiten.) A. Selig.
96 Non-Operative Treatment of Strabismus. (Ziele und Erfolge der unblutige Schielbehandlung.) P. Schultz-Zehden.
97 *Unsuspected Cancer as Cause of Hiccup. (Beitrag zum Kapitel "Singultus.") J. H. Greeff.

97. **Hiccup Due to Unsuspected Cancer.**—In Greeff's case the singultus persisted unmodified by all measures until the death of the patient, six months after the hiccup had first commenced to torment him. He was a man of 76, and the singultus developed a few weeks after recovery from pneumonia with pleurisy. The singultus recurred at intervals of only a few minutes, seldom more than a quarter of an hour, and there was occasionally a shrill intonation at the end of the hiccup showing the violence of the diaphragm spasm. Necropsy revealed a small tumor in the hilus of one lung, evidently a primary malignant growth, and probably responsible for the singultus by compression of the phrenic nerve directly or indirectly, although no positive evidence of this could be discovered.

Wiener klinische Wochenschrift, Vienna

July 20, XXIV, No. 29, pp. 1043-1078

98 Technic and Results of Photographing the Fundus of the Eye. (Photographie des Augenhintergrundes.) F. Dimmer.
99 Nature of Chorea Minor and the Chorea Psychoses. P. Jolly.
100 Allergy. (Zur Bewertung der Allergie.) Nourney.
101 Uterine Hemorrhage of Syphilitic Origin. J. v. Jaworski.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

A MANUAL OF PATHOLOGY AND MORBID ANATOMY. By T. Henry Green, M.D., F.R.C.P., Consulting Physician to Charing Cross Hospital, and to the Brompton Hospital for Consumption and Disease of the Chest. Eleventh Edition. Revised and Enlarged by W. Cecil Bosanquet, M.A., M.D., F.R.C.P., Assistant Physician (Late Pathologist) to Charing Cross Hospital and to the Brompton Hospital for Consumption and Diseases of the Chest. Cloth. Price, $4.50 net. Pp. 642, with 350 illustrations. Philadelphia: Lea & Febiger, 1911.

A MANUAL OF PRACTICAL HYGIENE FOR STUDENTS, PHYSICIANS AND HEALTH OFFICERS. By Charles Harrington, M.D., Late Professor of Hygiene in the Medical School of Harvard University. Fourth Edition, Revised and Enlarged, by Mark Wyman Richardson, M.D., Secretary to the State Board of Health of Massachusetts. Cloth. Price, $4.50 net. Pp. 850, with 124 illustrations. Philadelphia: Lea & Febiger, 1911.

THE BELLEVUE HOSPITAL NOMENCLATURE OF DISEASES AND CONDITIONS WITH RULES FOR THE RECORDING AND FILING OF HISTORIES. Compiled by the Committee on Clinical Records Composed of Drs. Robert J. Carlisle, Warren Coleman, Thomas A. Smith and Edmund L. Dow, 49 W. Fifty-Seventh Street, New York. Revised and Made to Conform to the International Classification, 1911. Morocco. Pp. 327.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF LABORATORY METHODS. For Students, Hospital Physicians and Practitioners. By Charles E. Simon, B.A., M.D., Professor of Clinical Pathology and Experimental Medicine at the College of Physicians and Surgeons, Baltimore, Md. Seventh Edition. Cloth. Price, $5 net. Pp. 778, with 168 illustrations. Philadelphia: Lea & Febiger, 1911.

INDEX-CATALOGUE OF MEDICAL AND VETERINARY ZOOLOGY. Part 34. (Authors: Werlhof to Xemard.) By C. Wardell Stiles, Ph.D., Consulting Zoologist, Bureau of Animal Industry, and Albert Hassall, M.R.C.V.S., Assistant Zoologist, Bureau of Animal Industry, U. S. Dept. of Agriculture Bureau of Animal Industry, Bull. No. 39. 1911.

OPHTHALMIC MYOLOGY. A Systematic Treatise on the Ocular Muscles. By G. C. Savage, M.D., Professor of Ophthalmology (Defects of the Eye) in the Medical Department of Vanderbilt University. Second Edition. Price, $4. Pp. 685, with 84 illustrations. G. C. Savage, 137 Eighth Avenue, Nashville, Tenn., 1911.

IMMUNE SERUMS. A Concise Exposition of the Main Facts and Theories of Infection and Immunity. By Dr. Charles Frederick Bolduan, Bacteriologist, Research Laboratory, Dept. of Health, City of New York. Fourth Edition. Price, $1.50. Pp. 226. New York: John Wiley & Sons, 1911.

REPORT OF THE EIGHTIETH MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. Sheffield: 1910. August 31-September 7. Cloth. Pp. 868. London: John Murray, Albemarle Street, 1911.

TRANSACTIONS OF THE FLORIDA MEDICAL ASSOCIATION FOR THE YEAR 1911. Held at Tallahassee, Fla., May 10, 11, 12, 1911. Paper. Pp. 177. Dr. J. D. Fernandez, Secretary, Jacksonville.

THIRTEENTH ANNUAL REPORT OF ST. FRANCIS' HOSPITAL, HARTFORD, CONN. Conducted by Sisters of St. Joseph. For the Year 1910. Paper. Pp. 67, with illustrations.

THE WUHU GENERAL HOSPITAL. Medical Report, 1910. Paper. Pp. 24. E. H. Hart, Surgeon, 7847 Winnecoma Avenue, Chicago.

REPORT OF THE VICE COMMISSION OF MINNEAPOLIS TO HIS HONOR, JAMES C. HAYNES, MAYOR. Paper. Pp. 134. 1911.

BIANNUAL REPORT OF THE HOFFMAN HOSPITAL, KEYSER, W. VA. Paper. Pp. 23, with illustrations. 1909-1910.